

Exhibit 12

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE DISTRICT OF NEW JERSEY
3

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4
5 IN RE: JOHNSON & JOHNSON

6 TALCUM POWDER PRODUCTS

7 MDL No.:

8 MARKETING, SALES PRACTICES,

9 16-2738 (FLW)(LHG)

10 AND PRODUCTS LIABILITY

11 LITIGATION
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13
14 ORAL AND VIDEOTAPED DEPOSITION OF
15 DANIEL L. CLARKE-PEARSON, M.D.

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<p>Page 10</p> <p>1 you don't understand and we'll repeat or rephrase the 2 question so it's clear to you. 3 Can you do that? 4 A. Yes, sir. 5 Q. If you answer a question, we're going to 6 assume that you understood it. Is that fair? 7 A. Fair. 8 MS. O'DELL: Objection. 9 BY MR. ZELLERS: 10 Q. As we go along, only one of us can speak at a 11 time. So please try to let me finish my question 12 before you answer. I will try to allow you to finish 13 your answer so that we can get the best record 14 possible. 15 Is that agreeable? 16 A. Agreeable. 17 Q. All right. You are following this, 18 apparently, on the realtime; is that right? 19 A. Yes. 20 Q. Is that going to be distracting to you? 21 A. It might be. 22 Q. All right. Well, have you ever done that 23 before in a deposition? 24 A. No, sir. 25 Q. Well, if it becomes distracting, then we'll</p>	<p>Page 12</p> <p>1 you know, across the board. If there is a document 2 that he has in his possession that may be 3 objectionable, then he can tell us what it is and you 4 can assert your objection. 5 MS. O'DELL: Well, you asked if he had 6 brought them here, and Dr. Clarke-Pearson has only 7 brought materials subject to requests that are not 8 objectionable, which include the materials listed in 9 his materials-considered list that are in the binders 10 behind me on the table. 11 They also include binders of cited 12 materials, his report, invoices, and the cases in 13 which he has provided testimony within the last five 14 years. I think he has a copy of his report in front 15 of him. 16 Those are the materials we view to be 17 nonobjectionable, and those are what 18 Dr. Clarke-Pearson has brought with him today. 19 MR. ZELLERS: Okay. Ms. O'Dell, as 20 we -- I would appreciate it if you let the witness 21 answer the questions. I do appreciate the 22 clarification. But, as we go along today, if you'll 23 do your best, you know, to follow the rules. I mean, 24 the both of us need to follow in terms of objections. 25 I'd appreciate it.</p>
<p>Page 11</p> <p>1 deal with it. 2 You are here pursuant to a notice of 3 deposition. We've marked the notice of deposition as 4 Exhibit 1. 5 (Exhibit No. 1 was marked for identification.) 6 BY MR. ZELLERS: 7 Q. Can you take a look at that and let us know 8 if you've seen that before? 9 MS. O'DELL: I would just reassert that 10 the objections to certain document requests in the 11 notice, I think those were previously served. 12 MR. ZELLERS: Yes, we did receive the 13 objections of plaintiffs. 14 THE WITNESS: Yes, I've seen this. 15 BY MR. ZELLERS: 16 Q. If you go to -- beginning on page 3, there 17 are a number of documents that are requested be 18 produced here today. 19 Have you either brought with you here today 20 or supplied to counsel for plaintiffs all of the 21 documents and materials in your possession that are 22 requested in the deposition notice? 23 MS. O'DELL: To the degree that they 24 are not objectionable -- 25 MR. ZELLERS: No. My question goes,</p>	<p>Page 13</p> <p>1 MS. O'DELL: Well, certainly, I'm going 2 to follow the rules today, but it's because of the 3 objections asserted and because it's unclear to what 4 degree Dr. Clarke-Pearson is familiar with all the 5 requests and all the objections, then that was just a 6 difficult question for him -- maybe an unfair question 7 for him. And so I have responded in keeping with our 8 previously served objections. 9 MR. ZELLERS: I don't think asking him 10 if he's gone through the request for production of 11 documents and can identify for us any documents that 12 are in your possession that are responsive that you've 13 not brought here today, I don't think that is a 14 difficult question. But let's have Dr. Clarke-Pearson 15 answer it. 16 THE WITNESS: I don't think I've 17 brought any of these documents here today. Counsel 18 has some of them, like my curriculum vitae. 19 BY MR. ZELLERS: 20 Q. My question, I guess, goes to -- so that we 21 can identify whether there's anything at all for us 22 that we need to fight about should be produced. 23 Are there documents that are responsive to 24 the notice of deposition that are not being produced 25 here today, to your knowledge, that originated from</p>

<p style="text-align: right;">Page 14</p> <p>1 you and are in your possession?</p> <p>2 A. I think let's just walk through the list,</p> <p>3 then. I don't have a CV in my possession, but counsel</p> <p>4 does --</p> <p>5 Q. And, Doctor, to shortcut this, I don't need</p> <p>6 to go through and ask you, you know, what documents</p> <p>7 are being produced.</p> <p>8 Are you aware of documents that are called</p> <p>9 for in the notice of deposition that are not being</p> <p>10 produced today?</p> <p>11 A. I don't -- I would have to go through this</p> <p>12 list. I don't have any documents with me aside from</p> <p>13 what you've just described.</p> <p>14 Q. So you've reviewed the notice of deposition</p> <p>15 in preparation for today; correct?</p> <p>16 A. Yes.</p> <p>17 Q. You knew that was important; correct?</p> <p>18 A. Yes.</p> <p>19 Q. And yet you're unable to tell us whether or</p> <p>20 not there are documents that are in your possession</p> <p>21 that are called for in the notice of deposition that</p> <p>22 you are not producing today; is that right?</p> <p>23 MS. O'DELL: Objection. That's not</p> <p>24 correct, but --</p> <p>25 MR. ZELLERS: Well, he can answer.</p>	<p style="text-align: right;">Page 16</p> <p>1 and then has advised me that you have reviewed a</p> <p>2 number of additional materials since you prepared your</p> <p>3 report. So I'd like to go through those now, if we</p> <p>4 can.</p> <p>5 Notice of deposition, Exhibit 2, is a copy,</p> <p>6 it appears, of your invoices in this matter. Is that</p> <p>7 right?</p> <p>8 (Exhibit No. 2 was marked for identification.)</p> <p>9 THE WITNESS: Yes, sir.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. You have spent a total of 20 hours working on</p> <p>12 this matter since being retained back in April of</p> <p>13 2017; is that right?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: Up until the preparation</p> <p>16 of -- and submission of my report, I spent 20 hours.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. All right. You prepared your report, you</p> <p>19 edited your report, and you submitted your report on</p> <p>20 November 4th of 2018; is that right?</p> <p>21 A. I believe it was -- I submitted it, but</p> <p>22 I think it was November 16th, 2018.</p> <p>23 Q. Did you bill any time or spend any time on</p> <p>24 the MDL talcum powder litigation between</p> <p>25 November 4th of 2018 and the end of the year,</p>
<p style="text-align: right;">Page 15</p> <p>1 MS. O'DELL: I've made my objection --</p> <p>2 MR. ZELLERS: Understood.</p> <p>3 MS. O'DELL: -- which I'm perfectly</p> <p>4 entitled to do that, as you know.</p> <p>5 MR. ZELLERS: You certainly are. You</p> <p>6 certainly are.</p> <p>7 MS. O'DELL: So, Dr. Clarke-Pearson,</p> <p>8 just answer to the best of your knowledge, and, of</p> <p>9 course, there are objections that have been asserted;</p> <p>10 and to the degree you're not familiar with those</p> <p>11 details, then counsel and I can sort that out later.</p> <p>12 THE WITNESS: So documents -- I do not</p> <p>13 have any of these documents in my possession. For</p> <p>14 example, I thought I saw -- passed you a document</p> <p>15 showing my billing and collections to date. Isn't</p> <p>16 that right on top?</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. My question was are you aware, as you sit</p> <p>19 here right now, of any documents that you have that</p> <p>20 are responsive to the notice of deposition that are</p> <p>21 not in the large pile of materials that we have here</p> <p>22 today?</p> <p>23 A. I'm not aware of any.</p> <p>24 Q. All right. Ms. O'Dell produced for us or</p> <p>25 provided to me two documents prior to the deposition</p>	<p style="text-align: right;">Page 17</p> <p>1 December 31st of 2018?</p> <p>2 A. Yes.</p> <p>3 Q. How much additional time did you spend during</p> <p>4 that time?</p> <p>5 A. I don't know exactly. I'd have to go back to</p> <p>6 several notes that I have on records and papers and</p> <p>7 that sort of thing. I would say between</p> <p>8 November 4th and today, it's been about 60 hours.</p> <p>9 Q. 60 additional hours?</p> <p>10 A. Yes, sir.</p> <p>11 Q. So you spent 20 hours talking with counsel,</p> <p>12 doing whatever research and analysis you needed to do,</p> <p>13 and writing your report; is that right?</p> <p>14 A. Yes.</p> <p>15 Q. You have spent an additional 60 hours since</p> <p>16 that time; is that right?</p> <p>17 A. Yes.</p> <p>18 Q. If your invoice is dated January 4th of 2019,</p> <p>19 Exhibit 2, why does none of that time appear on your</p> <p>20 invoice?</p> <p>21 A. Because my accounting office turned this over</p> <p>22 on January 4th. I submitted -- I submitted this</p> <p>23 invoice to my business manager, and this is when it</p> <p>24 was submitted from our office.</p> <p>25 Q. I guess I don't understand. You tell me that</p>

<p>Page 18</p> <p>1 you have worked a considerable amount of time between 2 November 4th of 2018 and the end of 2018; correct? 3 A. Yes. 4 Q. Why is that time and those hours not 5 reflected on your invoice which is dated January 4th 6 of 2019? 7 A. Because I hadn't submitted the request for my 8 business manager to submit the invoice to the 9 attorneys. 10 Q. Why did you cut off your time entry as of 11 November 4th, 2018? 12 MS. O'DELL: Object to the form. 13 THE WITNESS: I think there was a gap. 14 I can't tell you when I picked up again after 15 November 4th, after I did the report. There was a 16 time when I wasn't actively involved reading, 17 preparing. 18 BY MR. ZELLERS: 19 Q. Do you keep track of the time that you spend 20 doing activities as an expert witness in the MDL 21 talcum powder litigation? 22 A. Yes. 23 Q. And do you keep that on a regular, systematic 24 basis? 25 A. Not so much.</p>	<p>Page 20</p> <p>1 Ms. O'Dell -- strike that -- with Dr. Thompson over 2 the years? 3 A. I believe she probably called me somewhere 4 before April 17th when I was retained and described 5 work that was ongoing with talcum powder. So we had a 6 conversation. I didn't bill for that. 7 Q. You knew Dr. Thompson socially before being 8 retained; is this correct? 9 A. Yes. 10 Q. Other than -- 11 A. And -- excuse me. And professionally. 12 Q. Socially and professionally. 13 What professional interaction did you have 14 with Dr. Thompson since the time that you were a 15 resident and a fellow at Duke University? 16 A. Okay. So since that time -- I mean, 17 throughout her residency, we were professionally 18 involved with training and taking care of patients. 19 Subsequent to her completing her residency, I've not 20 had any professional interaction with her per se. 21 Q. Were you socially involved with Dr. Thompson 22 while the two of you were at Duke? 23 A. No. 24 Q. You might go to events and see one another, 25 but in terms of any relationship between the two of</p>
<p>Page 19</p> <p>1 Q. Were you first retained back in April of 2017 2 by Ms. O'Dell and by Ms. Thompson? 3 A. Yes, I believe so. 4 Q. Had you known Ms. O'Dell or any attorneys 5 from her office, the Beasley Allen office, prior to 6 being contacted in this litigation? 7 A. I had not known Ms. O'Dell. I knew 8 Dr. Thompson. 9 Q. How did you know Dr. Thompson? 10 A. Dr. Thompson and I were residents at Duke 11 University Medical Center. I was a few years ahead of 12 her, but we were in the residency training program. 13 And then I began my fellowship and gynecologic 14 oncology at Duke, and I believe Dr. Thompson was still 15 a resident during part of that time. 16 Q. Did you make -- maintain contact with 17 Dr. Thompson over the years? 18 A. Off and on. Probably on average about once a 19 year at an alumni meeting that we attended, although 20 neither one of us attended every year, but... 21 Q. These were alumni meetings at Duke 22 University; is that right? 23 A. With regard to the obstetrical and 24 gynecological department. 25 Q. Other contacts that you had with</p>	<p>Page 21</p> <p>1 you, there was none; is that fair? 2 A. I guess you'll have to define "relationship" 3 for me. 4 Q. Well, I was trying to make it easy. 5 Did you socialize with other persons in the 6 internship and residency programs while you were at 7 Duke? 8 A. Yes. And faculty and spouses, yes. 9 Q. And Dr. Thompson was one of those persons; is 10 that right? 11 A. Yes, sir. 12 Q. Do you know Dr. Thompson's husband or former 13 husband? 14 A. I did not. 15 Q. All right. Your contact was solely with 16 Dr. Thompson; is that right? 17 A. Yes. 18 Q. Over the years, prior to being retained by 19 Dr. Thompson in this litigation, did you review any 20 medicolegal matters for her? 21 A. No, sir. 22 Q. Were you asked to review any medicolegal 23 matters for her? 24 A. You just asked that question, I think. 25 Q. No --</p>

<p style="text-align: right;">Page 22</p> <p>1 A. Did I misunderstand?</p> <p>2 Q. Well, and at least what I had hoped was the</p> <p>3 distinction is that I had asked you if you had</p> <p>4 reviewed any matters, and then the second question was</p> <p>5 whether or not Dr. Thompson had requested that you</p> <p>6 review any medicolegal matters for her.</p> <p>7 A. Okay. So it's a two-part question. I did</p> <p>8 not review any matters, and Dr. Thompson hadn't</p> <p>9 requested me to review any medicolegal matters.</p> <p>10 Q. When -- well, strike that.</p> <p>11 What did Dr. Thompson ask you to do with</p> <p>12 respect to the MDL talcum powder litigation?</p> <p>13 A. At the time of the conference call with</p> <p>14 Ms. O'Dell and Dr. Thompson, I was asked to evaluate</p> <p>15 and offer my opinion regarding talcum powder and</p> <p>16 whether it was causative to the occurrence of ovarian</p> <p>17 cancer in women who use talcum powder on their</p> <p>18 perineum.</p> <p>19 Q. Were you asked to research or answer any</p> <p>20 other question other than that?</p> <p>21 A. So in my report, I think I make it clearer</p> <p>22 than what I just described. So "Can the use of talcum</p> <p>23 powder in the perineal area cause epithelial ovarian</p> <p>24 cancer?" and also, "If so, what biologic mechanism did</p> <p>25 this -- by which did this occur?" were the two key</p>	<p style="text-align: right;">Page 24</p> <p>1 GYN oncology community has been one of could talcum</p> <p>2 powder be associated with the occurrence of ovarian</p> <p>3 cancer?</p> <p>4 And, in fact, I think, in the early '70s, we</p> <p>5 believed it did; and then I was told as a trainee that</p> <p>6 talcum powder previously had had asbestos in it, and</p> <p>7 then we were told it was taken out. So that was very</p> <p>8 reassuring.</p> <p>9 Yet periodically over the years, papers came</p> <p>10 out -- case-control studies, cohort studies -- off and</p> <p>11 on that continued to raise the question.</p> <p>12 So the question has been in my mind. And,</p> <p>13 really, it wasn't until I really started thinking</p> <p>14 about this and gathered up all the literature that it</p> <p>15 became clear to me, and I formed my opinion.</p> <p>16 Q. That was my question. When did you form your</p> <p>17 opinion that talcum powder is causally related to</p> <p>18 ovarian cancer when used by women in the genital area?</p> <p>19 A. Well, some -- I'm not sure there was a</p> <p>20 particular day when the light bulb went off. I think</p> <p>21 in the process of digging into this issue in more</p> <p>22 detail and putting together all the case-control</p> <p>23 trials that had come out over a period of time and the</p> <p>24 meta-analysis that had come out over a period of time</p> <p>25 that kept raising questions, when I started to put</p>
<p style="text-align: right;">Page 23</p> <p>1 questions I was asked to form an opinion on.</p> <p>2 Q. You mentioned that you did speak with</p> <p>3 Dr. Thompson prior to the conversation with Ms. O'Dell</p> <p>4 and Dr. Thompson.</p> <p>5 What, at that time, did Dr. Thompson tell</p> <p>6 you about the litigation?</p> <p>7 A. I don't recall details. It was that she was</p> <p>8 working on cases that had to do with talcum powder and</p> <p>9 ovarian cancer.</p> <p>10 Q. Do you recall any other background that you</p> <p>11 were provided?</p> <p>12 A. Not at that time.</p> <p>13 Q. Did you understand that Dr. Thompson was</p> <p>14 representing the plaintiffs in this matter, along with</p> <p>15 a number of other attorneys?</p> <p>16 A. Yes.</p> <p>17 Q. Prior to being contacted by Dr. Thompson and</p> <p>18 by Ms. O'Dell, had you formed opinions in terms of</p> <p>19 whether or not talcum powder was causally related to</p> <p>20 ovarian cancer for women who used it in the perineal</p> <p>21 region?</p> <p>22 A. So that's an interesting question, because it</p> <p>23 goes back to my training. And throughout the years,</p> <p>24 since 1975, when I began my residency training, the</p> <p>25 conversation in the gynecologic community and the</p>	<p style="text-align: right;">Page 25</p> <p>1 that all together, it became clear to me that, in my</p> <p>2 opinion, talcum powder causes ovarian cancer.</p> <p>3 Q. That was sometime after you were contacted</p> <p>4 and retained in this matter back in April of 2017 as</p> <p>5 an expert for the plaintiffs; correct?</p> <p>6 A. It was the request to provide opinions and to</p> <p>7 develop an opinion, and I -- yes.</p> <p>8 Q. All right. Do you agree that the medical</p> <p>9 community as a whole has not reached a consensus that</p> <p>10 talcum powder causes ovarian cancer?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 Excuse me.</p> <p>13 THE WITNESS: I think we're at a</p> <p>14 tipping point in that question.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Can you answer that question?</p> <p>17 A. Well, I think you would have to define "the</p> <p>18 medical community" for me.</p> <p>19 Q. Well, let's be more specific.</p> <p>20 Has the gynecologic oncologist medical</p> <p>21 community reached a consensus that talcum powder</p> <p>22 causes ovarian cancer?</p> <p>23 A. As best I know, not at this time.</p> <p>24 Q. All right. You also -- Ms. O'Dell provided</p> <p>25 me with an updated list of your testimony; is that</p>

<p style="text-align: right;">Page 26</p> <p>1 right?</p> <p>2 MR. ZELLERS: We'll mark that as</p> <p>3 Exhibit 3.</p> <p>4 (Exhibit No. 3 was marked for identification.)</p> <p>5 THE WITNESS: Yes, sir.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. The testimony that you provided back in</p> <p>8 November of 2017 -- strike that -- November of 2018,</p> <p>9 when you submitted your report, Exhibit C -- we'll</p> <p>10 mark that as Deposition Exhibit 4 --</p> <p>11 (Exhibit No. 4 was marked for identification.)</p> <p>12 Q. -- contained just one listing of testimony;</p> <p>13 is that right?</p> <p>14 A. Yes.</p> <p>15 Q. What has changed since you prepared your</p> <p>16 report in November of 2018 and today with respect to</p> <p>17 deposition and trial testimony that you have provided?</p> <p>18 A. I believe simply an oversight on my part.</p> <p>19 Q. The oversight was not listing at least two of</p> <p>20 the matters that you had testified in in the past five</p> <p>21 years as of November of 2018; is that right?</p> <p>22 A. Yes, sir.</p> <p>23 Q. The Edmonson matter that you testified in</p> <p>24 December of 2014, was that a medical malpractice</p> <p>25 action?</p>	<p style="text-align: right;">Page 28</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. The medical malpractice cases that you have</p> <p>3 listed -- Edmonson, Pizzirusso, and Paduda -- were you</p> <p>4 serving as an expert for plaintiff or defense in those</p> <p>5 cases?</p> <p>6 A. In all three of those cases, for the defense.</p> <p>7 Q. Over the years, you have done a lot of</p> <p>8 testifying in medical malpractice cases. Is that</p> <p>9 fair?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: I don't know how you</p> <p>12 define "a lot."</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Have you given -- at least up until 2005 or</p> <p>15 so, did you give about three depositions a year in</p> <p>16 medical malpractice cases?</p> <p>17 A. Probably three or more. Three to six, maybe.</p> <p>18 Q. Since 2005, you've cut back some in terms of</p> <p>19 your medicolegal work; is that right?</p> <p>20 A. Yes.</p> <p>21 Q. Is it accurate to say that, over the years,</p> <p>22 you've testified about 50 percent for plaintiff and</p> <p>23 about 50 percent for defendants in litigation matters?</p> <p>24 A. Yes.</p> <p>25 Q. Is the only product liability matter that you</p>
<p style="text-align: right;">Page 27</p> <p>1 A. Yes, it was a malpractice action.</p> <p>2 Q. And September 1st of 2015, the Rappaport</p> <p>3 matter, that was a physician who was losing his or her</p> <p>4 privileges?</p> <p>5 A. He was being fired from his practice.</p> <p>6 Q. The Pizzirusso case or matter that you</p> <p>7 provided testimony in March of 2015, what was that?</p> <p>8 A. That was a medical malpractice case in</p> <p>9 Brooklyn, New York.</p> <p>10 Q. January of 2019, Paduda, what type of matter</p> <p>11 was that?</p> <p>12 A. This was -- I need to make sure I've got the</p> <p>13 two straight here. Yes, it's a medical malpractice</p> <p>14 case.</p> <p>15 Q. And then, finally, you were deposed on</p> <p>16 January 22nd of 2009 in a matter called Cutsinger.</p> <p>17 What type of matter was that?</p> <p>18 A. It was 2019.</p> <p>19 MS. O'DELL: '19.</p> <p>20 MR. ZELLERS: Thank you, Counsel.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. January 22nd of 2019.</p> <p>23 A. This is a product liability suit.</p> <p>24 Q. Involving what product?</p> <p>25 A. A morcellator manufactured by Gyrus.</p>	<p style="text-align: right;">Page 29</p> <p>1 have testified in, other than the MDL talcum powder</p> <p>2 litigation, the morcellator deposition that you gave</p> <p>3 earlier in -- this year, in January?</p> <p>4 A. Yes, sir.</p> <p>5 Q. Ms. O'Dell advised us at the start of the</p> <p>6 deposition that, in addition to the materials that you</p> <p>7 cite in your report and in your additional materials</p> <p>8 list, that you have now reviewed a number of</p> <p>9 additional materials prior to today; is that right?</p> <p>10 A. Yes.</p> <p>11 Q. Do those additional materials that you have</p> <p>12 reviewed change in any respect the opinions that you</p> <p>13 have set forth in your report?</p> <p>14 A. They reinforce and enhance or support my</p> <p>15 opinion.</p> <p>16 Q. As we go through today, I may refer to talc,</p> <p>17 I may refer to talcum powder, I may refer to talc</p> <p>18 products or to baby powder or to Shower to Shower.</p> <p>19 I intend, when I use those terms, to be referring to</p> <p>20 the baby powder product manufactured by Johnson &</p> <p>21 Johnson Consumer Products Inc. and the Shower to</p> <p>22 Shower product formerly manufactured by Johnson &</p> <p>23 Johnson Consumer Products Inc.</p> <p>24 Do you understand that?</p> <p>25 A. I understand.</p>

<p style="text-align: right;">Page 30</p> <p>1 Q. Your report which was provided to us, we will</p> <p>2 mark as Deposition Exhibit 5.</p> <p>3 (Exhibit No. 5 was marked for identification.)</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. Can you just take a quick look at that and</p> <p>6 confirm for us that that is Deposition Exhibit 5?</p> <p>7 A. It is.</p> <p>8 Q. Your report, which we have marked as</p> <p>9 Deposition Exhibit 5, does that contain all of the</p> <p>10 opinions that you intend to offer at any trial or</p> <p>11 hearing in this matter?</p> <p>12 A. I believe so, yes.</p> <p>13 Q. Does your report identify everything that you</p> <p>14 are relying on in forming your opinions in this</p> <p>15 matter?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: Obviously, we just talked</p> <p>18 about some additional information -- materials that</p> <p>19 I've reviewed since writing that report, so they would</p> <p>20 be included in my opinion.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. We'll go through in a moment the additional</p> <p>23 materials that you have reviewed.</p> <p>24 If we look at your report and if we look at</p> <p>25 the additional materials that you have reviewed in</p>	<p style="text-align: right;">Page 32</p> <p>1 report?</p> <p>2 A. Yes.</p> <p>3 Q. You've reviewed a chapter of a book by</p> <p>4 Creasman that was authored by Dr. Brewster; is that</p> <p>5 right?</p> <p>6 A. That's correct.</p> <p>7 Q. Is there anything else that you have reviewed</p> <p>8 and are relying on in preparation for your deposition</p> <p>9 today and in providing us with your opinions?</p> <p>10 A. So all these references here (indicating),</p> <p>11 I've reviewed. I believe they're listed as part of an</p> <p>12 exhibit.</p> <p>13 Q. And let's, you know, be as systematic as we</p> <p>14 can be.</p> <p>15 Your report, Exhibit 5, has a list of</p> <p>16 references; is that right?</p> <p>17 A. Yes.</p> <p>18 Q. What do you intend -- or what is the meaning</p> <p>19 of the references that appear as pages 11 through 14</p> <p>20 in your report?</p> <p>21 A. Those references support what I quote -- not</p> <p>22 quotes, but facts that are in my report. They don't</p> <p>23 include everything that I used in my consideration of</p> <p>24 coming to my opinion.</p> <p>25 Q. Deposition Exhibit 6 is Exhibit B to your</p>
<p style="text-align: right;">Page 31</p> <p>1 preparation for the deposition, does that include all</p> <p>2 of the materials that you are relying on in forming</p> <p>3 your opinion?</p> <p>4 A. To be clear, you're saying what I have</p> <p>5 included in my report plus my additional materials,</p> <p>6 that's what I relied on?</p> <p>7 Q. Yes.</p> <p>8 Is that correct?</p> <p>9 A. Yes.</p> <p>10 Q. Is your report accurate?</p> <p>11 A. Yes.</p> <p>12 Q. Is your report complete?</p> <p>13 A. I believe it is.</p> <p>14 Q. Let's try to quickly go through, if we can,</p> <p>15 the additional materials that you have reviewed since</p> <p>16 you prepared your report, Exhibit 5.</p> <p>17 Ms. O'Dell stated that you have reviewed the</p> <p>18 Health Canada risk assessment; is that right?</p> <p>19 A. Yes.</p> <p>20 Q. You have reviewed the Taher, T-A-H-E-R, 2018</p> <p>21 publication; is that right?</p> <p>22 A. Yes.</p> <p>23 Q. You have reviewed the 2019 Saed paper?</p> <p>24 A. Yes.</p> <p>25 Q. You have reviewed the Longo supplemental</p>	<p style="text-align: right;">Page 33</p> <p>1 report.</p> <p>2 (Exhibit No. 6 was marked for identification.)</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Is that correct?</p> <p>5 Is Deposition Exhibit B a listing of</p> <p>6 additional materials considered?</p> <p>7 A. Yes, it is.</p> <p>8 Q. Did you actually read and consider all of the</p> <p>9 materials that are cited as Exhibit B to your report?</p> <p>10 A. I would say I did not read every word of</p> <p>11 every paper. I reviewed them, many times reading the</p> <p>12 abstract.</p> <p>13 Q. Did you read at least the abstract of each of</p> <p>14 the references contained as Exhibit B to your report,</p> <p>15 going from page 1 through page 28?</p> <p>16 A. I believe so.</p> <p>17 Q. Exhibit B is meant to be materials that you</p> <p>18 considered but are not directly relying on in</p> <p>19 formulating your opinions; is that fair?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: That's fair.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. In addition to the references that are</p> <p>24 attached to your report, Exhibit 5 to the deposition,</p> <p>25 and Exhibit B, which we've marked as Exhibit 6 to the</p>

<p style="text-align: right;">Page 34</p> <p>1 deposition, are there any other materials that you</p> <p>2 have reviewed and relied upon in formulating the</p> <p>3 opinions you're going to give today other than the</p> <p>4 additional materials that we discussed a moment ago?</p> <p>5 A. No.</p> <p>6 Q. Are there any additional materials that you</p> <p>7 have reviewed and relied upon since the time of your</p> <p>8 report other than the materials that have been</p> <p>9 identified by Ms. O'Dell?</p> <p>10 A. No.</p> <p>11 Q. Did you bring those additional materials with</p> <p>12 you in the folders that you have in front of you?</p> <p>13 A. Some of them. I have the Longo updated</p> <p>14 report, for example.</p> <p>15 Q. All right. I'd like to just mark, so that we</p> <p>16 have a record of what it is you have reviewed, to the</p> <p>17 extent there's any ambiguity in the record. And, for</p> <p>18 example, I'm looking at --</p> <p>19 MS. O'DELL: Mike, excuse me. Can</p> <p>20 I just mention one thing?</p> <p>21 MR. ZELLERS: Yes.</p> <p>22 MS. O'DELL: Because when you were</p> <p>23 going through your list, I had mentioned before an</p> <p>24 UpToDate reference. It's in the stack I think you</p> <p>25 have in your hand. But you didn't mention that in</p>	<p style="text-align: right;">Page 36</p> <p>1 you relied upon?</p> <p>2 A. Yes, sir.</p> <p>3 Q. We'll mark the Brewster chapter as Exhibit 7.</p> <p>4 (Exhibit No. 7 was marked for identification.)</p> <p>5 MR. ZELLERS: We will mark the UpToDate</p> <p>6 reprint as Exhibit 8.</p> <p>7 (Exhibit No. 8 was marked for identification.)</p> <p>8 MR. ZELLERS: We will mark the Emerging</p> <p>9 Themes in Epidemiology, 2015, Fedak, as Exhibit 9.</p> <p>10 (Exhibit No. 9 was marked for identification.)</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. I'll return these to you, Doctor.</p> <p>13 Can you show me or provide to me whatever</p> <p>14 folders you have brought. I don't need the binders,</p> <p>15 but just whatever additional materials you have</p> <p>16 brought with you.</p> <p>17 (Document was handed to counsel.)</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. And then it looks like you have IARC</p> <p>20 monographs; is that right?</p> <p>21 A. Yes.</p> <p>22 Q. Are those IARC monographs that you have</p> <p>23 brought with you, is that something that's either on</p> <p>24 your reference list or your reliance list?</p> <p>25 A. I believe it is.</p>
<p style="text-align: right;">Page 35</p> <p>1 your sort of questions to Dr. Clarke-Pearson. So</p> <p>2 I don't want there to be a misrepresentation --</p> <p>3 MR. ZELLERS: Understood.</p> <p>4 MS. O'DELL: -- on the -- I didn't mean</p> <p>5 it that way. I didn't want there to be a</p> <p>6 misunderstanding on the record.</p> <p>7 MR. ZELLERS: I do understand.</p> <p>8 I appreciate the clarification.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. What I had been given was a clip with the</p> <p>11 Brewster chapter from the Creasman textbook. But in</p> <p>12 addition to what was on top, there is an UpToDate</p> <p>13 official reprint that states at the top</p> <p>14 "Evidence-based medicine," and then it lists several</p> <p>15 authors, the first of which is Arthur T. Evans; is</p> <p>16 that correct?</p> <p>17 A. Yes.</p> <p>18 Q. That's an additional set of materials that</p> <p>19 you have reviewed and relied upon?</p> <p>20 A. Yes.</p> <p>21 Q. Also in the stack, and something that I did</p> <p>22 not mention earlier, is "Emerging Themes in</p> <p>23 Epidemiology, Analytical Perspective." First author</p> <p>24 is Fedak. And this appears to be a 2015 publication.</p> <p>25 Is that also something that you reviewed and</p>	<p style="text-align: right;">Page 37</p> <p>1 Q. Can you just tell us the title of the IARC</p> <p>2 monograph that you have brought with you?</p> <p>3 A. "IARC Monographs on the Evaluation of</p> <p>4 Carcinogenic Risks to Humans, Volume 93, Carbon Black,</p> <p>5 Titanium Dioxide, and Talc," dated 2010.</p> <p>6 Q. The next set of materials, I'll mark these</p> <p>7 collectively as Exhibit 10 so we can keep them in the</p> <p>8 same order that you have brought them with you.</p> <p>9 (Exhibit No. 10 was marked for identification.)</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. Exhibit 10, the first page is a listing of</p> <p>12 handwritten notes. Can you read just the first line</p> <p>13 to us.</p> <p>14 A. "Exposure IARC 100C page 232."</p> <p>15 Q. What does that refer to?</p> <p>16 A. I put these together, if I can explain, so</p> <p>17 that we might facilitate this discussion and be able</p> <p>18 to find documents a little bit more quickly.</p> <p>19 Q. What discussion does Exhibit 10 relate to?</p> <p>20 A. Could I see the front of the folder, please?</p> <p>21 Q. Sure.</p> <p>22 A. It has to do with asbestos and ovarian</p> <p>23 cancer.</p> <p>24 Q. I will re-mark Deposition Exhibit 10.</p> <p>25 Instead of putting the sticker on your page of</p>

<p style="text-align: right;">Page 38</p> <p>1 handwritten notes, I'll put it on the outside of the 2 folder, which are your references on asbestos and 3 ovarian cancer; is that right? 4 MS. O'DELL: Object to the form. 5 THE WITNESS: They are some of my 6 references. 7 BY MR. ZELLERS: 8 Q. These are the references, though, that you 9 chose to bring with you today to be prepared to answer 10 questions that the lawyers may ask? 11 MS. O'DELL: Object to the form. He 12 brought other references as well. 13 THE WITNESS: All of these references 14 here are -- also could support the question in that 15 folder about asbestos and ovarian cancer. 16 BY MR. ZELLERS: 17 Q. Who prepared the folder "Asbestos on Ovarian 18 Cancer"? 19 A. I did. 20 Q. Whose notes are the first page of this 21 folder? 22 A. That's mine. 23 Q. Who chose to include and to write down the 24 references that you did on this piece of paper? 25 A. I did.</p>	<p style="text-align: right;">Page 40</p> <p>1 MS. O'DELL: Object to the form. 2 THE WITNESS: Many of them were 3 reprints that I created, and some were given to me by 4 counsel. 5 BY MR. ZELLERS: 6 Q. Are you able -- if we went through your list 7 of references that are attached to your report, 8 Exhibit 5, are you able to tell me easily which ones 9 came from counsel and which ones you may have found on 10 your own? 11 A. No, not easily. 12 Q. All right. Same question with respect to 13 Exhibit B, this 28 pages of additional materials. Are 14 you able to separate out for us easily what materials 15 came from counsel and what materials you found on your 16 own? 17 MS. O'DELL: Object to the form. 18 THE WITNESS: No, I can't. 19 BY MR. ZELLERS: 20 Q. The materials that are included in Deposition 21 Exhibit 10, the articles that you list on your sheet 22 of paper and have brought with you, there is a -- it 23 looks like an excerpt from the IARC working group 24 relating to asbestos and different types of asbestos; 25 is that right?</p>
<p style="text-align: right;">Page 39</p> <p>1 Q. The other exhibits that you have today, the 2 exhibits that we marked, was it -- Exhibit 9, is that 3 the Brewster chapter? 4 A. Exhibit 7 is the Brewster chapter. 5 Q. Okay, Exhibit 7. Who provided those 6 materials to you? 7 A. This is from a textbook in my office. 8 Q. Okay. Did you obtain that -- you know, that 9 information? 10 A. I'm not quite sure -- so I wrote a chapter 11 for this textbook myself on surgical complications. 12 It's a textbook that's in my office. This particular 13 document, if you will, or reprint from that chapter, 14 I'm not sure if I produced it or counsel did. 15 Q. Well, it's clear at the bottom that it was 16 produced by counsel; correct? 17 A. Okay. 18 Q. There's a notation that Dr. Thompson 19 downloaded that reference back in January of this 20 year; is that right? 21 A. I see that, yes. 22 Q. Are many of the materials that you've looked 23 at, including those on your reference list, your 24 additional materials-considered list, materials that 25 were provided to you by counsel for the plaintiffs?</p>	<p style="text-align: right;">Page 41</p> <p>1 A. Yes. 2 Q. You're not an expert in asbestos; correct? 3 MS. O'DELL: Object to the form. 4 THE WITNESS: It seems like I've become 5 pretty good at it after reading all of this material. 6 BY MR. ZELLERS: 7 Q. Well, I understand that. But you do not hold 8 yourself out or consider yourself to be an expert in 9 asbestos; is that right? 10 A. I think I've made it part of my job as an 11 expert to become very familiar with the issues 12 regarding asbestos and ovarian cancer. 13 Q. Do you consider yourself to be an expert in 14 asbestos? 15 A. Can you define "expert," please. 16 Q. Sure. Are you an expert in the different 17 types of asbestos: chrysotile, amosite, 18 crocidolite, tremolite, actinolite, and anthophyllite? 19 A. I'm aware that there are different types of 20 asbestos. 21 Q. Are you an expert in it? 22 MS. O'DELL: Object to the form. 23 THE WITNESS: I'm not sure I understand 24 what an expert is. 25</p>

<p style="text-align: right;">Page 42</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. You're testifying as an expert gynecologist</p> <p>3 oncologist in this case; is that right?</p> <p>4 A. Yes.</p> <p>5 Q. You consider yourself to be an expert in that</p> <p>6 field; is that right?</p> <p>7 A. Of course.</p> <p>8 Q. Do you consider yourself to be an expert, to</p> <p>9 provide expert testimony to the jury, on asbestos and</p> <p>10 the different forms of asbestos?</p> <p>11 A. I think I can testify to the jury what is in</p> <p>12 the literature and the impact that asbestos has on</p> <p>13 ovarian cancer risk.</p> <p>14 Q. Prior to being retained by Dr. Thompson and</p> <p>15 Ms. O'Dell, did you have professional experience with</p> <p>16 asbestos?</p> <p>17 A. I'm not sure what you mean by "professional</p> <p>18 experience." I don't use it in my practice.</p> <p>19 Q. Did you research it?</p> <p>20 A. As I said, back in 1975, when I was a</p> <p>21 resident, there was discussion about asbestos in</p> <p>22 talcum powder.</p> <p>23 Q. Did you consider yourself to be an expert in</p> <p>24 asbestos before you were retained by Dr. Thompson and</p> <p>25 Ms. O'Dell?</p>	<p style="text-align: right;">Page 44</p> <p>1 or alleged health effects of those different types of</p> <p>2 asbestos?</p> <p>3 A. Yes.</p> <p>4 Q. Did you consider yourself to be an expert in</p> <p>5 asbestos prior to being retained in this litigation in</p> <p>6 2017?</p> <p>7 MS. O'DELL: Objection. Asked and</p> <p>8 answered.</p> <p>9 THE WITNESS: I don't know when</p> <p>10 I morphed into feeling I knew more about asbestos than</p> <p>11 I did in 1975.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Your -- the -- strike that.</p> <p>14 What gives you expertise, in your view, as</p> <p>15 an expert in asbestos is the reading that you have</p> <p>16 done since being retained in this matter; is that</p> <p>17 right?</p> <p>18 MS. O'DELL: Objection to the form.</p> <p>19 Misstates his testimony.</p> <p>20 THE WITNESS: The knowledge that I've</p> <p>21 gained over time, including during this preparation</p> <p>22 for this deposition and my report.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. When you were contacted by Dr. Thompson, did</p> <p>25 you consider yourself to be an expert in asbestos at</p>
<p style="text-align: right;">Page 43</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I was aware of issues</p> <p>3 with asbestos in terms of carcinogenic potential for</p> <p>4 mesothelioma and ovarian cancer.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Is that a yes, you considered yourself to be</p> <p>7 an expert in asbestos prior to being retained in this</p> <p>8 matter?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 I think he stated he was an expert in the health</p> <p>11 effects.</p> <p>12 MR. ZELLERS: The doctor can answer the</p> <p>13 questions.</p> <p>14 MS. O'DELL: He did answer the</p> <p>15 question.</p> <p>16 THE WITNESS: That's what I was trying</p> <p>17 to say. It was the health effects, carcinogenic</p> <p>18 potential of asbestos in talcum powder and other</p> <p>19 industrial exposures.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Are you familiar with at least what the</p> <p>22 different types of claimed asbestos is in talcum</p> <p>23 powder?</p> <p>24 A. Yes.</p> <p>25 Q. And are you familiar with the health effects</p>	<p style="text-align: right;">Page 45</p> <p>1 that time?</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: Again, I've told you what</p> <p>4 I knew about asbestos at that time, and I've learned</p> <p>5 more since then.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. Can you answer my question?</p> <p>8 Did you consider yourself to be an expert in</p> <p>9 asbestos when you were first contacted by</p> <p>10 Dr. Thompson?</p> <p>11 A. Again, I'm stuck with what -- how you define</p> <p>12 asbestos -- how you define an expert.</p> <p>13 Q. You're an expert who -- an expert is someone</p> <p>14 who has a special expertise in a matter that peers</p> <p>15 would look to as a person and a resource.</p> <p>16 Do people look to you as a resource on</p> <p>17 asbestos?</p> <p>18 A. People looked to me for a long time with</p> <p>19 regard to -- as a resource with regard to asbestos and</p> <p>20 its effects on the female genital tract and ovarian</p> <p>21 cancer.</p> <p>22 Q. So that's a yes, people have come to you for</p> <p>23 some number of years as an expert on asbestos?</p> <p>24 A. Patients have.</p> <p>25 MS. O'DELL: Object to the form. It</p>

<p style="text-align: right;">Page 46</p> <p>1 misstates his testimony.</p> <p>2 MR. ZELLERS: Well, I'm trying to get</p> <p>3 an answer to my question.</p> <p>4 MS. O'DELL: I think he answered your</p> <p>5 question.</p> <p>6 THE WITNESS: Patients have come to me</p> <p>7 as an expert in this topic as it relates to their</p> <p>8 health.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. How about your peers? Do your peers come to</p> <p>11 you as an expert in asbestos at any time?</p> <p>12 A. I have different groups of peers. My</p> <p>13 gynecologic oncology colleagues, I don't think I'm any</p> <p>14 more of an expert than they are.</p> <p>15 On the other hand, a general obstetrician</p> <p>16 and gynecologist, an internist, a family medicine</p> <p>17 physician, a pediatrician would consider me an expert.</p> <p>18 Q. And that -- so my question very simply is do</p> <p>19 your peers come to you as an expert in asbestos?</p> <p>20 MS. O'DELL: Object to the form. Asked</p> <p>21 and answered.</p> <p>22 THE WITNESS: I have lots of different</p> <p>23 levels of peers, is what I was trying to describe.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. The second article that you brought and</p>	<p style="text-align: right;">Page 48</p> <p>1 Q. Did you prepare these notes?</p> <p>2 A. Yes.</p> <p>3 Q. First paper you list here is -- or have</p> <p>4 brought with you included in this folder and</p> <p>5 highlighted is Gates, which was published</p> <p>6 November 12th of 2009; is that right?</p> <p>7 A. Yes.</p> <p>8 Q. You also have brought a paper, HHS Public</p> <p>9 Access, "Douching, Talc Use," Epidemiology, 2016.</p> <p>10 First author is Gonzalez; is that right?</p> <p>11 A. Yes, sir.</p> <p>12 Q. Then you have another collection of materials</p> <p>13 with some additional handwritten notes, also in what</p> <p>14 we have marked as Exhibit 11, your "EPI" folder. And</p> <p>15 at the top of your handwritten notes, which appear on</p> <p>16 two Post-its, it's "Penninkilampi."</p> <p>17 That is a study that you have written down</p> <p>18 along with some other notes, and you have brought that</p> <p>19 with you in your folder; is that right?</p> <p>20 A. Yes.</p> <p>21 Q. You have brought the Berge paper, dated</p> <p>22 May 18, 2018, European Journal of Cancer Prevention.</p> <p>23 You have that in your folder; correct?</p> <p>24 A. Yes.</p> <p>25 Q. You have the Langseth paper that was accepted</p>
<p style="text-align: right;">Page 47</p> <p>1 placed in your "Asbestos Ovarian Cancer" folder is an</p> <p>2 article by Reid. States at the top, published online</p> <p>3 first May 24, 2011, in Cancer Epidemiology,</p> <p>4 "Biomarkers & Prevention"; is that right?</p> <p>5 A. Yes.</p> <p>6 Q. The third article is "Occupational Exposure</p> <p>7 to Asbestos and Ovarian Cancer." This is a paper with</p> <p>8 the first author of Camargo. It appears that it was</p> <p>9 published in Environmental Health Perspectives,</p> <p>10 September 2011; is that right?</p> <p>11 A. Yes.</p> <p>12 Q. The last paper that you included in your</p> <p>13 folder was an article on ovarian cancer and asbestos,</p> <p>14 first named author Graham. It was received -- is this</p> <p>15 1967?</p> <p>16 A. Yes, sir.</p> <p>17 Q. You brought with you, which we will mark as</p> <p>18 Exhibit 11, a folder captioned "EPI." Is that right?</p> <p>19 A. Yes.</p> <p>20 (Exhibit No. 11 was marked for identification.)</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. The first page, are these your notes to help</p> <p>23 you in terms of answering my questions relating to the</p> <p>24 epidemiology of ovarian cancer and talcum powder?</p> <p>25 A. Yes, sir.</p>	<p style="text-align: right;">Page 49</p> <p>1 for -- well, strike that -- that was published in</p> <p>2 Journal of Epidemiol. Community Health, 2008; is that</p> <p>3 right?</p> <p>4 A. Yes.</p> <p>5 Q. And then finally, you have in your folder the</p> <p>6 Taher -- T-A-H-E-R -- paper, which appears to be -- is</p> <p>7 this a 2018 or 2019 paper, if you know?</p> <p>8 A. I don't know.</p> <p>9 Q. Was the Taher paper something that was</p> <p>10 provided to you by counsel for the plaintiffs?</p> <p>11 A. Yes.</p> <p>12 Q. Was the Health Canada assessment something</p> <p>13 that was provided to you by counsel for plaintiffs?</p> <p>14 A. Yes.</p> <p>15 Q. You've got a folder on animals with a couple</p> <p>16 of very brief notes. We've marked your folder on</p> <p>17 animals as Exhibit 12.</p> <p>18 (Exhibit No. 12 was marked for identification.)</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. First paper we have is the Keskin article</p> <p>21 from Gynecologic Obstetrics, 2009. Keskin is spelled</p> <p>22 K-E-S-K-I-N. Is that right?</p> <p>23 A. Yes, the spelling's correct.</p> <p>24 Q. The next paper is the Hamilton paper. It</p> <p>25 looks like it was published in 1984. The other</p>

<p style="text-align: right;">Page 50</p> <p>1 authors are Fox, Buckley, Henderson, and Griffiths. 2 It was received for publication in 1983. 3 Is that right? 4 A. Yes. 5 Q. Are these studies that you found, these 6 animal studies, or are these studies that were 7 provided to you by counsel for the plaintiffs? 8 MS. O'DELL: Object to the form. 9 THE WITNESS: I think it's some of 10 both. 11 BY MR. ZELLERS: 12 Q. Well, there's only two that are here. So did 13 you find and review the Keskin paper? 14 A. I found it and reviewed it, yes. 15 Q. Not provided to you by counsel; is that 16 right? 17 A. Can I see them both? 18 Q. Sure. Of course. 19 (Document was handed to the witness.) 20 THE WITNESS: I think I printed this 21 online, off of PubMed. 22 BY MR. ZELLERS: 23 Q. And my question is a little different. 24 Are these articles that you were made aware 25 of by plaintiffs' counsel, or are these articles that</p>	<p style="text-align: right;">Page 52</p> <p>1 articles that I identified in my literature search. 2 BY MR. ZELLERS: 3 Q. Did you find any articles on the latency 4 period of ovarian cancer in women? 5 A. The latency at the time of exposure to 6 asbestos or talcum powder? 7 Q. Yes. 8 A. I think it's clear that there has to be a 9 latency period, and it's probably very parallel, in my 10 opinion, to the latency period for mesothelioma and 11 many other cancers that requires decades of exposure 12 before one develops ovarian cancer. 13 Q. Can you be any more precise than "decades of 14 exposure"? 15 MS. O'DELL: Object to the form. 16 THE WITNESS: No more precise than 17 these papers that talk about the latency for 18 mesothelioma -- 19 BY MR. ZELLERS: 20 Q. You believe -- 21 A. -- which run the gamut from 22 to 32 years in 22 one paper and 20 to 40 years in another paper. 23 Q. You believe that the latency period for 24 ovarian cancer is the same as the latency period for 25 mesothelioma; is that right?</p>
<p style="text-align: right;">Page 51</p> <p>1 you found in any research that you did after being 2 retained in this matter? 3 A. I understand your question. 4 Yes, I researched and found these as I did 5 my PubMed search. 6 Q. All right. Latency, Exhibit 13. 7 (Exhibit No. 13 was marked for identification.) 8 BY MR. ZELLERS: 9 Q. You've got a couple of handwritten notes, 10 just a couple of articles in here. One is "The 11 latency period of mesothelioma among a cohort of 12 British asbestos workers (1978-2005)"; and also 13 "Latency Period for Malignant Mesothelioma" by 14 Dr. Lanphear, which is dated -- well, we'll have to 15 just let the record -- it was uploaded in 2016 by the 16 author. 17 Are these materials that you found in your 18 search and have put together, or are these articles 19 that were provided to you by counsel? 20 MS. O'DELL: Object to the form. 21 THE WITNESS: May I see that again? 22 BY MR. ZELLERS: 23 Q. Sure. 24 (Document was handed to the witness.) 25 THE WITNESS: I believe these are both</p>	<p style="text-align: right;">Page 53</p> <p>1 MS. O'DELL: Object to the form. 2 THE WITNESS: I believe it should be 3 very close. 4 /// 5 /// 6 (Exhibit No. 14 was marked for identification.) 7 BY MR. ZELLERS: 8 Q. The last folder that you brought with you is 9 the -- is titled or captioned "Asbestos Fibers Talc 10 Longo, etc." 11 Is this also a folder that you prepared? 12 A. Yes, sir. 13 Q. You've got a number of handwritten notes and 14 calculations here; is that right? 15 MS. O'DELL: Object to the form. 16 THE WITNESS: I'm not sure it's 17 calculations. It's notes taken from the papers. 18 BY MR. ZELLERS: 19 Q. You cite and have brought with you a report, 20 Longo, January 15th, 2019. 21 Is that the updated report that was referred 22 to earlier? 23 A. That's my understanding. 24 Q. You've got, looks like, an exhibit from the 25 Hopkins deposition; is that right?</p>

<p style="text-align: right;">Page 54</p> <p>1 A. Yes.</p> <p>2 Q. You have an article by Blount, "Amphibole</p> <p>3 Asbestos in Vermont Talc"; is that correct?</p> <p>4 A. Yes.</p> <p>5 Q. That's got an Imerys Bates number on it.</p> <p>6 Is that where you obtained that document?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: I obtained it from</p> <p>9 counsel.</p> <p>10 BY MR. ZELLERS</p> <p>11 Q. And then you also have the Pier deposition</p> <p>12 exhibit in your folder; is that right?</p> <p>13 A. Yes.</p> <p>14 Q. Have we now identified all of the materials</p> <p>15 that you have reviewed and relied upon in formulating</p> <p>16 your opinions in this matter?</p> <p>17 A. Above and beyond these folders, the other</p> <p>18 folders that we have here are included in my reliance.</p> <p>19 Q. Your reliance list and your reference list;</p> <p>20 is that right?</p> <p>21 A. Yes.</p> <p>22 Q. Exhibit A, just so we are complete here, is</p> <p>23 your CV, or curriculum vitae, as of the time that your</p> <p>24 report was published; is that right?</p> <p>25 (Exhibit No. 15 was marked for identification.)</p>	<p style="text-align: right;">Page 56</p> <p>1 that this was submitted in November 2018.</p> <p>2 Q. Are there any updates to your curriculum</p> <p>3 vitae that you believe in any way are relevant to the</p> <p>4 opinions you're giving here today?</p> <p>5 A. I understand. No, there's no -- nothing</p> <p>6 relevant to add.</p> <p>7 Q. I did not tell you at the beginning, but if</p> <p>8 at any time you need to take a break and get up and</p> <p>9 stretch, just tell me and we'll do that.</p> <p>10 A. Okay.</p> <p>11 MR. ZELLERS: Same goes for you as</p> <p>12 well, Counsel.</p> <p>13 MS. O'DELL: Thank you.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Did anyone assist you with your review and</p> <p>16 research and preparation of your report in this matter</p> <p>17 other than counsel?</p> <p>18 A. No, sir.</p> <p>19 Q. You were able to do the research that you</p> <p>20 felt you needed to do to answer the questions that</p> <p>21 were posed to you by counsel for the plaintiffs within</p> <p>22 the 20 hours that are identified in your invoice,</p> <p>23 Exhibit 2, between April 17th of 2017 and</p> <p>24 November 4th of 2018?</p> <p>25 A. That's what I billed for. As I sort of</p>
<p style="text-align: right;">Page 55</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. And your report was published or provided and</p> <p>3 signed in November of 2018?</p> <p>4 And that's too many questions in one.</p> <p>5 You attached an exhibit, Exhibit A, to your</p> <p>6 report, which we have marked as Exhibit 5; is that</p> <p>7 right?</p> <p>8 MS. O'DELL: Is it -- Exhibit 15 is</p> <p>9 the --</p> <p>10 MR. ZELLERS: So Exhibit 15 is --</p> <p>11 Deposition Exhibit 15 is a copy of Exhibit A to</p> <p>12 Dr. Clarke-Pearson's report, which we marked as</p> <p>13 Exhibit 5.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Number one, is that correct? Is this your</p> <p>16 CV?</p> <p>17 A. This is my CV at the time my report was</p> <p>18 submitted.</p> <p>19 Q. Is there a date on this curriculum vitae?</p> <p>20 A. I don't believe so.</p> <p>21 Q. Was it accurate and complete as of November</p> <p>22 of 2018?</p> <p>23 A. I'm just checking to see what my most recent</p> <p>24 reference was in here. I try to keep it up to date.</p> <p>25 Yes, I believe it was correct at the time</p>	<p style="text-align: right;">Page 57</p> <p>1 indicated earlier, I'm not very diligent on marking</p> <p>2 down every minute or every hour that I spend. So</p> <p>3 that's what I billed for. It's close to what time</p> <p>4 I spent.</p> <p>5 Q. That's your best estimate of the time that</p> <p>6 you had spent on this matter through the preparation</p> <p>7 of your report, which we marked as Exhibit 5; is that</p> <p>8 right?</p> <p>9 A. That's correct.</p> <p>10 Q. When were you first asked to prepare a</p> <p>11 report?</p> <p>12 A. I'm not sure I can answer that question. It</p> <p>13 was obviously after I'd been retained and after I'd</p> <p>14 had the opportunity to review materials to be able to</p> <p>15 formulate an opinion.</p> <p>16 Q. Other than Ms. O'Dell and Dr. Thompson, what</p> <p>17 other attorneys for the plaintiffs in the MDL talcum</p> <p>18 powder litigation have you met with or communicated</p> <p>19 with?</p> <p>20 A. I met Ms. Brown yesterday for the first time.</p> <p>21 Q. Anyone else?</p> <p>22 A. No, sir.</p> <p>23 Q. Do the -- strike that.</p> <p>24 Does your invoice, Exhibit 2, approximate</p> <p>25 the meetings and discussions that you had with</p>

<p style="text-align: right;">Page 58</p> <p>1 Dr. Thompson and Ms. O'Dell up and through the 2 production of your report in November of 2018? 3 MS. O'DELL: Objection. Form. 4 THE WITNESS: I believe so. 5 BY MR. ZELLERS: 6 Q. Since then, what other time have you spent 7 with the attorneys for plaintiffs relating to this 8 matter? 9 A. I've had one meeting, I believe in early 10 January, for an hour and a half or two -- 11 Q. Was that an in-person meeting or -- 12 A. Yes, it was in person. 13 Q. Was that here in Chapel Hill? 14 A. Yes. 15 Q. Was that with Ms. O'Dell and Dr. Thompson? 16 A. Yes. 17 Q. Anyone else? 18 A. No. 19 Q. Any other meetings that you've had with 20 counsel preparing for your deposition? 21 A. This past Saturday and Sunday. 22 Q. Did you meet with the three plaintiffs' 23 counsel who are here today? 24 A. Ms. O'Dell and Dr. Thompson on Saturday, and 25 Ms. Brown joined us on Sunday.</p>	<p style="text-align: right;">Page 60</p> <p>1 powder proceeding, aside from the talcum powder MDL? 2 A. No. 3 Q. What percent of your professional time do you 4 spend working as a consultant? 5 A. With regard to medicolegal expert witness 6 work? 7 Q. Yes. 8 A. What percent? I'd say probably 5 percent in 9 this past year, less than that in the preceding 10 several years. 11 Q. What percent of your income is from 12 consulting on litigation matters? 13 A. None of my income. 14 Q. You receive no income as an expert witness 15 consultant on litigation? 16 A. No. 17 Q. Where does the money that you're billing for 18 your services as an expert witness in this case go? 19 A. The rules that we have at University of North 20 Carolina is that any revenue, if you will, from expert 21 witness work is considered clinical revenue and is 22 sent to the practice plan. 23 Q. Does your income, at least in part -- is it 24 determined by the income you bring into the 25 university?</p>
<p style="text-align: right;">Page 59</p> <p>1 Q. What amount of time did you spend, total, on 2 Saturday and Sunday with counsel preparing for the 3 deposition? 4 A. I'd estimate probably four to five hours on 5 Saturday and about five to six hours on Sunday. 6 Q. Anything else you did to prepare for your 7 deposition? 8 A. I reviewed a lot of materials here to be 9 really fresh on it. That's why you see these folders. 10 Q. Anything else you did to prepare for your 11 deposition? 12 A. I'm not sure I understand what else I might 13 do. 14 Q. Did you talk to anyone other than counsel for 15 plaintiffs? 16 A. I see. No, I didn't. 17 Q. Did you speak to any of your colleagues about 18 this? 19 A. No, sir. 20 Q. The total amount of time that you've spent, 21 you would approximate to be the 20 hours that are 22 reflected on Exhibit 2, plus an additional 60 hours up 23 until today when we started your deposition? 24 A. That would be my approximation, yes. 25 Q. Have you been retained in any other talcum</p>	<p style="text-align: right;">Page 61</p> <p>1 A. The compensation plan doesn't account for the 2 income we bring in. 3 Q. Your testimony is that doesn't matter what 4 grants you may bring in, it doesn't matter what expert 5 witness consulting you may do or what income you may 6 generate, it has no effect on your compensation; is 7 that right? 8 MS. O'DELL: Object to the form. 9 THE WITNESS: The Department of 10 Obstetrics & Gynecology at the University of North 11 Carolina, of which I'm the chair, the compensation 12 plan, the base salary is based on the AAMC median 13 income based on subspecialty. 14 So a maternal-fetal medicine physician, 15 based on their rank -- assistant, associate, and full 16 professor -- has a different median income than does a 17 gynecologic oncologist, but it's pegged to national 18 standards. 19 BY MR. ZELLERS: 20 Q. Is there any type of bonus or additional 21 compensation that someone in your department, 22 including yourself, can earn? 23 A. Yes. 24 Q. How or what are the factors in terms of bonus 25 compensation or additional compensation?</p>

<p style="text-align: right;">Page 62</p> <p>1 A. Clinical relative value units that are 2 generated by a faculty member that exceed the 3 60th percentile are then attributed to that faculty 4 member. The percent of the number of faculty members' 5 RVUs that are generated as a whole are then divided 6 out amongst the pot of money, if you will, that's 7 available for incentive distribution. And that amount 8 of money depends upon the department's overall 9 financial status.</p> <p>10 Q. Do grants that are brought into the 11 university by members of your department have any 12 impact or part in this incentive distribution 13 calculation?</p> <p>14 A. Yes.</p> <p>15 Q. Do -- or strike that.</p> <p>16 Does any income from litigation consulting 17 have a part in this incentive distribution?</p> <p>18 A. No.</p> <p>19 Q. Are you -- you are in charge of the 20 department; is that right?</p> <p>21 A. I'm the chair of the department.</p> <p>22 Q. Do you have to balance the books in terms of 23 money in and money out?</p> <p>24 A. Yes, sir.</p> <p>25 Q. Does income that you generate from litigation</p>	<p style="text-align: right;">Page 64</p> <p>1 A. Yes.</p> <p>2 Q. Is that included in the disclosure that was 3 given to us today, Exhibit 3?</p> <p>4 A. I considered it as deposition and trial 5 testimony.</p> <p>6 Q. So there were two testimonies, both of which 7 you gave on December 12th of 2014; is that right?</p> <p>8 A. No. That was probably when we submitted our 9 invoice. I got this information from my billing 10 department.</p> <p>11 Q. So Edmonson really should be two testimonies; 12 is that right?</p> <p>13 A. Yes. Deposition --</p> <p>14 Q. And the deposition --</p> <p>15 A. A deposition and trial testimony.</p> <p>16 Q. And the date you've given here relates to 17 your invoice, not to when you provided the testimony?</p> <p>18 A. I believe so.</p> <p>19 Q. And the same answer with respect to 20 Rappaport. The date on Exhibit 3 doesn't relate to 21 when you provided the testimony; is that right?</p> <p>22 A. That's right. And I had a deposition and 23 trial.</p> <p>24 Q. And, lastly, with respect to the Pizzirusso 25 matter, the date doesn't relate to when you provided</p>
<p style="text-align: right;">Page 63</p> <p>1 consulting help you balance the books of the 2 department?</p> <p>3 A. Yes.</p> <p>4 Q. The Deposition Exhibit 3, your list of 5 testimony that you've given in the past five years, is 6 that now accurate and complete?</p> <p>7 A. Yes, sir.</p> <p>8 Q. Have all of the testimonies you've given that 9 are listed on Exhibit 3, are those all deposition 10 testimony? Or have you testified at trial?</p> <p>11 A. Let me take a look at them.</p> <p>12 The Edmonson and Lee, I testified at trial. 13 Rappaport, I testified at trial. Pizzirusso, I 14 testified at trial. The latter two that I -- are just 15 depositions.</p> <p>16 Q. Is it accurate you did not give deposition 17 testimony in Edmonson, Rappaport, and Pizzirusso?</p> <p>18 A. No, that's not accurate.</p> <p>19 Q. Well, should those depositions also be 20 included in this list of testimonies?</p> <p>21 A. I don't know exactly what you asked for. 22 I -- this is either depositions or testimony that 23 I made in court.</p> <p>24 Q. Did you give a deposition in Edmonson in the 25 past five years?</p>	<p style="text-align: right;">Page 65</p> <p>1 the testimony; correct?</p> <p>2 A. That's correct.</p> <p>3 Q. And it was actually a deposition and trial 4 testimony in those matters; is that right?</p> <p>5 A. Yes.</p> <p>6 Q. Have you ever been retained in a case 7 involving asbestos?</p> <p>8 A. No.</p> <p>9 Q. Have you ever been retained in a case 10 involving cosmetic products?</p> <p>11 A. No, sir.</p> <p>12 Q. Did you review any of the expert reports of 13 the other experts that have been retained by the 14 plaintiffs in the MDL talcum powder litigation?</p> <p>15 MS. O'DELL: Other than Dr. Longo, 16 which he's testified to.</p> <p>17 MR. ZELLERS: I'd like to hear it from 18 the doctor, but, yes, other than Dr. Longo.</p> <p>19 THE WITNESS: I've read a lot of 20 things. Not many reports, so I don't recall exactly 21 if I -- may I ask counsel, since we've been working? 22 BY MR. ZELLERS:</p> <p>23 Q. Well, no, because I really want it to be your 24 testimony. If you don't understand -- and I should 25 have told you this up front. If you have to guess or</p>

<p style="text-align: right;">Page 66</p> <p>1 speculate to answer my question, tell me you can't 2 answer it because it would call for a guess or 3 speculation. 4 A. Okay. I can't answer that. 5 Q. You don't recall, as you sit here, other than 6 Dr. Longo's updated report, reviewing any other expert 7 reports in this litigation; correct? 8 MS. O'DELL: Object to the form. 9 THE WITNESS: I reviewed Dr. Longo's 10 original report and now the updated report. 11 BY MR. ZELLERS: 12 Q. Other than those reports, at least as you sit 13 here, you don't have a memory of reviewing other 14 expert reports in this matter; is that right? 15 A. I don't recall. 16 Q. Do you recall reviewing any defense expert -- 17 or strike that. 18 Do you recall reviewing any other expert 19 reports in any talcum powder litigation other than the 20 MDL? 21 A. No. 22 Q. Have you communicated about the litigation -- 23 the MDL talcum powder litigation -- with anyone other 24 than plaintiffs' counsel? 25 A. I'm required to communicate that to the</p>	<p style="text-align: right;">Page 68</p> <p>1 A. Sometime after I formed my opinion. I'm not 2 sure. I'm in communication with Dr. Rice quite often. 3 She's a friend of mine. 4 Q. Was it before or after you prepared your 5 report -- 6 A. It was after my report. 7 Q. So sometime after November -- 8 A. 16th. 9 Q. -- 16th of 2018; is that right? 10 A. Yes. 11 Q. Any other communication you've had with 12 anyone other than counsel for plaintiffs regarding 13 your opinion that talc is a cause of ovarian cancer? 14 A. No. 15 Q. Have you reviewed any deposition or trial 16 testimony from any of the talcum powder cases? 17 A. Yes. I'm blanking on her name. The GYN 18 oncologist, Judy -- one of the experts on the 19 plaintiffs' side that -- 20 Q. Judy Wolf? 21 A. Yeah, Judy Wolf. 22 Q. Do you know Dr. Wolf? 23 A. I've met her once. 24 Q. Have you had any discussions with her about 25 the subject matter of your opinions in this case with</p>
<p style="text-align: right;">Page 67</p> <p>1 hospital counsel, and I have. 2 Q. Who is the hospital counsel? 3 A. Her name is Glenn -- G-L-E-N-N -- George. 4 Q. Does she work for the university directly or 5 is she in private practice, if you know? 6 A. She works for the University of North 7 Carolina Hospital as the head counsel. 8 Q. Have you communicated about talc as a cause 9 of ovarian cancer with anyone other than the 10 plaintiffs' counsel? 11 A. As it regards to this case? 12 Q. Yes, as it regards to this case and your 13 opinion that talcum powder used in the perineal region 14 by women is a cause of ovarian cancer. 15 A. I've communicated to the immediate past 16 president of the Society of Gynecologic Oncology that 17 I think that they should investigate and offer a 18 committee opinion on the topic. 19 Q. Who is the -- past president you said you 20 communicated with? 21 A. Past president. 22 Q. Who is that? 23 A. Her name is Laurel Rice, R-I-C-E. 24 Q. When did you have that communication with 25 Dr. Rice?</p>	<p style="text-align: right;">Page 69</p> <p>1 Dr. Wolf? 2 A. I've had no communication with Dr. Wolf 3 whatsoever. 4 Q. You reviewed her deposition transcript in 5 preparation for today; correct? 6 A. Yes. 7 Q. Any other deposition transcripts or trial 8 transcripts in the talcum powder litigation or any 9 talcum powder case that you have reviewed? 10 A. Reviewed -- I can't remember the name -- 11 Pinkerton, maybe. It was a toxicologist that had a 12 deposition. 13 Q. Do you remember the name or do you -- did you 14 know this toxicologist? 15 A. I don't know the toxicologist. I think the 16 name was Pinkerton. 17 Q. Any other deposition transcripts or trial 18 transcripts that you have reviewed? 19 A. No, sir. 20 Q. Were the transcripts of Dr. Wolf and 21 Pinkerton, the toxicologist, provided to you by 22 counsel for the plaintiffs? 23 A. Yes. 24 Q. Did you request any information or material 25 from counsel for the plaintiffs that was not provided</p>

<p style="text-align: right;">Page 70</p> <p>1 to you?</p> <p>2 A. No. I think everything was provided to me</p> <p>3 that I requested.</p> <p>4 Q. In your report and in one of your file</p> <p>5 folders, you have exhibits from the deposition of John</p> <p>6 Hopkins. And let me rephrase that. You have an</p> <p>7 exhibit from a witness by the name of John Hopkins.</p> <p>8 Are you aware of that?</p> <p>9 A. Yes.</p> <p>10 Q. Who is Mr. Hopkins?</p> <p>11 A. I've been -- it's my understanding -- and</p> <p>12 I may be wrong -- that he is a former employee of</p> <p>13 Johnson & Johnson.</p> <p>14 Q. Do you know what he did for Johnson &</p> <p>15 Johnson?</p> <p>16 A. I believe somehow he was involved with</p> <p>17 testing of talcum powder to evaluate for products such</p> <p>18 as fibrous talc and asbestos.</p> <p>19 Q. Do you know anything else that Mr. Tom --</p> <p>20 Mr. Hopkins did for Johnson & Johnson?</p> <p>21 A. No.</p> <p>22 Q. Did you review or read his deposition?</p> <p>23 A. I did not.</p> <p>24 Q. Do you know who Julie Pier is?</p> <p>25 A. Vaguely.</p>	<p style="text-align: right;">Page 72</p> <p>1 THE WITNESS: I'm sorry. You're asking</p> <p>2 me about peer-reviewed publications?</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Yes, and whether or not you have ever relied</p> <p>5 upon isolated exhibits provided to you by counsel from</p> <p>6 depositions that you have never read as support for</p> <p>7 any of your peer-reviewed publications.</p> <p>8 A. In a peer-reviewed publication, one on</p> <p>9 occasion will cite a personal communication from a</p> <p>10 colleague or an expert.</p> <p>11 Q. Can you answer my question?</p> <p>12 A. "In a peer-reviewed publication, one on</p> <p>13 occasion will cite a personal communication" -- okay.</p> <p>14 So your question was -- all right.</p> <p>15 So in my peer-reviewed publications, I would</p> <p>16 say the answer is no.</p> <p>17 Q. What is the difference between the references</p> <p>18 which are at the end of your report that we marked as</p> <p>19 Exhibit 5 and the list of additional materials which</p> <p>20 we marked as Deposition Exhibit 6 and you included as</p> <p>21 Exhibit B to your report?</p> <p>22 A. Those are additional materials that</p> <p>23 I reviewed in formulating my opinion, but I felt that</p> <p>24 they didn't need to be included in my report.</p> <p>25 Q. Were the references that you listed in your</p>
<p style="text-align: right;">Page 71</p> <p>1 Q. Who is Julie Pier?</p> <p>2 A. My understanding is that she has also done</p> <p>3 testing on Johnson & Johnson products.</p> <p>4 Q. Do you know where she works or by whom she is</p> <p>5 employed?</p> <p>6 A. No.</p> <p>7 Q. Did you read her deposition transcript?</p> <p>8 A. No.</p> <p>9 Q. Have you reviewed any other exhibits to the</p> <p>10 deposition of John Hopkins?</p> <p>11 A. No, sir.</p> <p>12 Q. Have you reviewed any other exhibits to the</p> <p>13 deposition of Julie Pier?</p> <p>14 A. No.</p> <p>15 Q. Is it your practice outside of litigation to</p> <p>16 rely on isolated exhibits from deposition testimony?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: I think sometimes if</p> <p>19 they're meaningful, yes.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Have you ever, in any of the peer-reviewed</p> <p>22 publications that are listed in Exhibit A, cited to</p> <p>23 isolated exhibits from deposition testimony of</p> <p>24 depositions that you didn't read?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 73</p> <p>1 report, Exhibit 5, the key primary materials that</p> <p>2 you're relying on?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I think that's fair to</p> <p>5 say, yes.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. If you go to Exhibit 6 -- could you find that</p> <p>8 in front of you. This, again, is Exhibit B to your</p> <p>9 report. Go to page 11.</p> <p>10 And you see, starting at the bottom of page</p> <p>11 11 carried over to page 12, there are a number of</p> <p>12 documents that begin with "Imerys" and then have a</p> <p>13 number following them.</p> <p>14 Do you see that?</p> <p>15 A. Yes.</p> <p>16 Q. Did you rely on those documents in forming</p> <p>17 your opinions?</p> <p>18 A. I reviewed them.</p> <p>19 Q. Can you identify for us here what those</p> <p>20 documents are?</p> <p>21 A. I would have to go to the books to review</p> <p>22 them.</p> <p>23 Q. Do you know how those documents were</p> <p>24 compiled?</p> <p>25 A. They were supplied by counsel.</p>

<p style="text-align: right;">Page 74</p> <p>1 Q. Turning to page 13, there's a series of</p> <p>2 documents that begin with "J&J" followed by numbers.</p> <p>3 Do you see that?</p> <p>4 A. Yes.</p> <p>5 Q. Did you rely on those documents in forming</p> <p>6 your opinions?</p> <p>7 A. I reviewed them, and they probably served as</p> <p>8 part of my overall opinion; but I'm not referencing</p> <p>9 them per se in my report.</p> <p>10 Q. Can you identify or tell us what those</p> <p>11 documents are?</p> <p>12 A. These were internal documents from J&J.</p> <p>13 I don't recall specifically what each one of these</p> <p>14 numbers represent.</p> <p>15 Q. Do you know how they were compiled?</p> <p>16 A. They were provided to me by counsel.</p> <p>17 Q. Plaintiffs' counsel provided you with these</p> <p>18 select company documents that you have identified in</p> <p>19 your additional materials list; is that right?</p> <p>20 A. Yes.</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. Were you provided with any documents of</p> <p>24 either Imerys or J&J by counsel for plaintiffs that</p> <p>25 you did not include or list in your additional</p>	<p style="text-align: right;">Page 76</p> <p>1 first time I've been shown internal documents in a</p> <p>2 litigation.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Do you have any knowledge as to what</p> <p>5 percentage of the internal documents that have been</p> <p>6 produced in this litigation were actually provided to</p> <p>7 you and appear in your materials-considered list,</p> <p>8 Exhibit 6 to this deposition?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: I do not.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Is it fair to say, Dr. Clarke-Pearson, that</p> <p>13 the only company documents that you reviewed -- either</p> <p>14 Imerys or Johnson & Johnson -- are the ones that were</p> <p>15 hand-selected by plaintiffs' lawyers and provided to</p> <p>16 you?</p> <p>17 A. Yes, that's fair to say.</p> <p>18 Q. Do you agree, based upon your experience and</p> <p>19 the studies that you've reviewed, that most women who</p> <p>20 used talcum powder in their perineal region begin that</p> <p>21 use before age 30?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: I believe that's</p> <p>24 reasonable. I'm not aware of any data that</p> <p>25 specifically says that.</p>
<p style="text-align: right;">Page 75</p> <p>1 materials-considered list?</p> <p>2 A. No. I believe I've listed everything that we</p> <p>3 saw.</p> <p>4 Q. Based upon -- well, strike that.</p> <p>5 Did you review each of these documents of</p> <p>6 Imerys and J&J that are identified in your</p> <p>7 materials-reviewed list?</p> <p>8 MS. O'DELL: Objection. Asked and</p> <p>9 answered.</p> <p>10 THE WITNESS: Yes.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Based upon that review, did you ask</p> <p>13 plaintiffs' counsel if there were any additional</p> <p>14 documents or documents that might put in context the</p> <p>15 documents that were selected by plaintiffs' counsel</p> <p>16 for you to review?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: No, I didn't ask for</p> <p>19 that.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Outside of your work in litigation, do you,</p> <p>22 with respect to your scientific publications and work,</p> <p>23 rely on small subsets of internal company documents?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: I believe this is the</p>	<p style="text-align: right;">Page 77</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. Well, the Cramer 2016 paper actually goes</p> <p>3 through and lists out the age for the folks that were</p> <p>4 included in that study first used genital powder. Is</p> <p>5 that generally familiar to you?</p> <p>6 A. I can pull the paper if we're going to need</p> <p>7 to discuss it more, but...</p> <p>8 Q. Well, my question is -- and you can decide if</p> <p>9 you need to pull the paper. But do you agree that,</p> <p>10 based upon your review of the literature, your</p> <p>11 personal experience, that the vast majority of women</p> <p>12 who use talcum powder in their perineal region begin</p> <p>13 that use before the age of 30?</p> <p>14 If you need to take a look at the Cramer</p> <p>15 paper, go to page 336. This is Cramer 2016, Table 1.</p> <p>16 A. So --</p> <p>17 Q. I think it's a simple question --</p> <p>18 A. Probably so.</p> <p>19 So can you restate the question? I've lost</p> <p>20 it on the screen.</p> <p>21 Q. Sure.</p> <p>22 Do you agree that most women who use talcum</p> <p>23 powder in their perineal region begin that use before</p> <p>24 age 30?</p> <p>25 A. Yes.</p>

<p style="text-align: right;">Page 78</p> <p>1 Q. Do you agree that, on average, women who use 2 talcum powder in their perineal region continue that 3 use for over 20 years? 4 A. Yes. 5 Q. It's your opinion that talcum powder causes 6 ovarian cancer; is that right? 7 A. Yes, sir. 8 Q. What are the other causes of ovarian cancer? 9 A. We can talk about risk factors -- 10 Q. No, I don't want to talk about risk factors. 11 You have identified talcum powder as a causative 12 factor in ovarian cancer; is that right? 13 A. Right. 14 Q. That's different than being a risk factor for 15 ovarian cancer; is that right? 16 MS. O'DELL: Object to the form. 17 THE WITNESS: I'm not sure that's true. 18 BY MR. ZELLERS: 19 Q. Well, is it your opinion that ovarian cancer 20 is caused by talcum powder or that talcum powder is a 21 risk factor for ovarian cancer? 22 A. Ovarian cancer is caused by talcum powder. 23 Q. What other causes of ovarian cancer are 24 there, in your opinion? 25 A. Fair enough.</p>	<p style="text-align: right;">Page 80</p> <p>1 cause, but the cause doesn't -- but the risk factor 2 doesn't cause the cancer in every instance. 3 Q. Talcum powder is a risk factor for ovarian 4 cancer; is that right? 5 A. And it causes ovarian cancer. 6 Q. Every factor that you identified for us -- 7 age, pelvic inflammatory disease, obesity -- those are 8 all risk factors for ovarian cancer and, in your 9 opinion, causes of ovarian cancer; is that right? 10 A. Yes. 11 Q. If a study shows a statistically significant 12 relationship between a risk factor and a disease, is 13 that enough for the factor to be classified as a 14 cause? 15 A. In my opinion, yes. 16 Q. Just takes one study; is that right? 17 MS. O'DELL: Object to the form. 18 THE WITNESS: No. Now we're talking 19 about the totality of the evidence, and nearly all of 20 those -- all those risk factors that I described to 21 you that are causative for ovarian cancer, including 22 talcum powder, there's more than just one study. 23 BY MR. ZELLERS: 24 Q. Let me ask my question again because I may 25 not have been clear.</p>
<p style="text-align: right;">Page 79</p> <p>1 Age, lack of exposure to birth control 2 pills, lack of being pregnant -- so nulliparity -- 3 obesity, women that have had pelvic inflammatory 4 disease, women who use a nonhormonal-producing 5 intrauterine device, women who have gene mutations for 6 BRCA1, 2, or Lynch syndrome. 7 There are probably others; but, off the top 8 of my head, I think that's a fairly complete list. 9 Q. Each of the items that you have mentioned, in 10 your opinion, those are causes of ovarian cancer; is 11 that right? 12 A. Yes. 13 Q. What is the difference between a risk factor 14 and a cause? 15 A. They're virtually the same. A risk factor 16 describes a cause. It does not affect every woman 17 that has that risk factor. 18 Q. Is that true for all of the risk factors that 19 you just identified? 20 A. Yes. 21 Q. Is that true for talcum powder? 22 A. Yes. 23 Q. What makes a factor cross the line from being 24 a risk factor to being a cause? 25 A. Well, I think that the risk factor is the</p>	<p style="text-align: right;">Page 81</p> <p>1 If a study shows a statistically significant 2 relationship between a risk factor and a disease, is 3 that enough for the factor to be classified as a 4 cause? 5 A. I see what you're saying. 6 So, no, one study is not sufficient, in my 7 opinion. 8 Q. Other than your discussion with Dr. Rice 9 sometime after November 16th of 2018, what have you 10 done to alert the medical community about the 11 relationship between talcum powder and ovarian cancer? 12 MS. O'DELL: Object to the form. 13 THE WITNESS: That's all I've done 14 right now. 15 BY MR. ZELLERS: 16 Q. What was your methodology for concluding that 17 talcum powder causes ovarian cancer? 18 A. All right. So then we get into what 19 I describe as my methods to come to this conclusion. 20 And I was asked by counsel to form an opinion one way 21 or the other. 22 To do that, I used very similar techniques 23 that I use in doing peer-reviewed publications, of 24 which I have over 250 and over 50 book chapters. 25 I need to research the literature.</p>

<p style="text-align: right;">Page 82</p> <p>1 In this case, I used a PubMed search.</p> <p>2 I also used a Google search. And I reviewed a number</p> <p>3 of textbooks. In my PubMed search, many times there</p> <p>4 were references that then I would turn to and also</p> <p>5 pull up to review; and that's where many of these</p> <p>6 publications over here in these binders come from.</p> <p>7 As I then start working my way through it,</p> <p>8 we start -- you know, in medicine, I would call it</p> <p>9 evidence-based medicine. In this particular</p> <p>10 circumstance, Bradford Hill criteria are used to come</p> <p>11 to a conclusion. And I have my Bradford Hill summary</p> <p>12 in the back of my -- at the end of my report to show</p> <p>13 you how I came to my conclusions that talcum powder</p> <p>14 causes ovarian cancer.</p> <p>15 Q. Anything else that you did in terms of your</p> <p>16 methodology for concluding that talcum powder causes</p> <p>17 ovarian cancer?</p> <p>18 A. I, you know, of course, in looking at</p> <p>19 publications come to try to put some weight on the</p> <p>20 publications, whether this is something that should be</p> <p>21 given more weight or less weight.</p> <p>22 I don't have a scoring system per se, but</p> <p>23 evaluating the size of the study, the statistical</p> <p>24 analysis, the study design, the credibility of the</p> <p>25 author, the quality of the journal that the</p>	<p style="text-align: right;">Page 84</p> <p>1 I think, pretty much interchangeable terms.</p> <p>2 I think in evidence-based medicine probably</p> <p>3 fits more into my clinical practice, and it's my</p> <p>4 understanding Bradford Hill fits more into litigation.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Try to answer my question if you can.</p> <p>7 Do you believe that the standard for proving</p> <p>8 causation in the medical and scientific literature is</p> <p>9 the same as the one that applies in litigation?</p> <p>10 MS. O'DELL: Object to the form. Asked</p> <p>11 and answered.</p> <p>12 THE WITNESS: I believe so.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Is it generally known among gynecological</p> <p>15 oncologists that talcum powder causes ovarian cancer?</p> <p>16 A. Not until recently. I think I referred to a</p> <p>17 tipping point that's happening right now that will</p> <p>18 make more gynecologic oncologists aware of the</p> <p>19 problem.</p> <p>20 Q. At least as of now, though, the answer would</p> <p>21 be no based upon your experience; correct?</p> <p>22 A. My experience at the moment is that many</p> <p>23 gynecologic oncologists are starting to suspect that</p> <p>24 there is an association and that talcum powder causes</p> <p>25 ovarian cancer based on the literature and then also,</p>
<p style="text-align: right;">Page 83</p> <p>1 publication is printed in are all things that come to</p> <p>2 my -- fit into my evaluation and help me come to my</p> <p>3 conclusion.</p> <p>4 Q. Anything else?</p> <p>5 A. In the end, it's a matter of the totality of</p> <p>6 what I've reviewed to bring forward my opinion based</p> <p>7 on the Bradford Hill criteria.</p> <p>8 Q. Anything else?</p> <p>9 A. Not that I'm aware of except for my own</p> <p>10 personal experience as a gynecologic oncologist for</p> <p>11 nearly 40 years. And I've harkened back several times</p> <p>12 already to my early training and then subsequent to</p> <p>13 that.</p> <p>14 Q. Did you follow this same methodology with</p> <p>15 regard to the other question that you addressed,</p> <p>16 whether or not there was a biologic mechanism by which</p> <p>17 talcum powder could cause ovarian cancer?</p> <p>18 A. Yes, sir.</p> <p>19 Q. Do you believe that the standard for proving</p> <p>20 causation in the medical literature is the same as the</p> <p>21 one that applies in litigation?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: I think that we use --</p> <p>24 whether you want to call it Bradford Hill or whether</p> <p>25 we want to call it evidence-based medicine, those are,</p>	<p style="text-align: right;">Page 85</p> <p>1 importantly, on what the news media has been</p> <p>2 reporting.</p> <p>3 Q. What was your methodology for focusing on</p> <p>4 certain studies and excluding or not addressing other</p> <p>5 studies in your review?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: Well, I think I tried to</p> <p>8 answer that before. I was trying to put a weight to</p> <p>9 those studies that are more or less strong, if you</p> <p>10 will, and -- and others that are there but really</p> <p>11 don't have any input or bearing on my decision.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. You do not discuss or address the cohort</p> <p>14 studies in your report; is that right?</p> <p>15 A. That's true.</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. Would you agree that, if you had only looked</p> <p>19 at the cohort studies in this case, that you would not</p> <p>20 have been able to opine that talcum powder causes</p> <p>21 ovarian cancer?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: Exactly why I tried to do</p> <p>24 a full literature search and included case-control</p> <p>25 studies.</p>

<p style="text-align: right;">Page 86</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. You believe -- well, strike that.</p> <p>3 You have published a number of articles on</p> <p>4 ovarian cancer; is that right?</p> <p>5 A. I believe so.</p> <p>6 Q. In any of those articles, have you published</p> <p>7 your theory that baby powder causes ovarian cancer?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: The intention of those</p> <p>10 articles was not to address causation or risk factors.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Is the answer no, that you have not, at least</p> <p>13 in those publications, discussed your theory that baby</p> <p>14 powder causes ovarian cancer?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: Those papers were not</p> <p>17 intended to discuss risk factors associated with</p> <p>18 talcum powder, so the answer is no.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. Have you conducted any tests or experiments</p> <p>21 to confirm your theory that talc migrates from the</p> <p>22 perineum to the ovaries?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: It's my opinion -- and</p> <p>25 this is not a theory -- that it's well established in</p>	<p style="text-align: right;">Page 88</p> <p>1 MS. O'DELL: Mike, after</p> <p>2 Dr. Clarke-Pearson answers this question, we've been</p> <p>3 going about an hour and 50 minutes. If we could take</p> <p>4 a break, that would be great.</p> <p>5 MR. ZELLERS: That's fine. I've got</p> <p>6 one more after this, and then would be glad to take a</p> <p>7 break.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Dr. Clarke-Pearson, can you answer that?</p> <p>10 A. I thought I had a folder on inflammation</p> <p>11 here. I don't think you put it under your pile. But,</p> <p>12 at any rate, I think I have seen evidence that talc</p> <p>13 can cause inflammation in the ovary.</p> <p>14 Q. Let me ask my question again.</p> <p>15 Can you identify a single article that</p> <p>16 identifies inflammation anywhere in a woman's</p> <p>17 reproductive tract resulting from external genital</p> <p>18 talc application?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: I don't believe so, that</p> <p>21 I can quote for you right now.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. Can you cite a single study, animal or human,</p> <p>24 that traces externally applied talc up through the</p> <p>25 reproductive tract to the ovaries?</p>
<p style="text-align: right;">Page 87</p> <p>1 the gynecologic community that talc can migrate along</p> <p>2 with other particles from the perineum to the ovarian</p> <p>3 surface and fallopian tube.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. Try and answer my question if you can.</p> <p>6 Have you, Dr. Clarke-Pearson, conducted any</p> <p>7 tests or experiments to confirm the theory that talc</p> <p>8 migrates from the perineum to the ovaries?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: No, I have not.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Have you, Dr. Clarke-Pearson, conducted any</p> <p>13 tests or experiments to confirm your theory that talc</p> <p>14 causes cancer via inflammation?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: It's not my theory; it's</p> <p>17 my opinion that talc causes ovarian cancer through</p> <p>18 inflammation.</p> <p>19 I have not done any studies to confirm my</p> <p>20 opinion.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Can you identify a single article that</p> <p>23 identifies inflammation anywhere in a woman's</p> <p>24 reproductive tract resulting from external genital</p> <p>25 talc application?</p>	<p style="text-align: right;">Page 89</p> <p>1 A. I think that's well accepted, as I said, in</p> <p>2 the gynecologic community, that the vagina is open to</p> <p>3 the outside world, if you will, there's no lid at the</p> <p>4 opening of the vagina, and that particles of talc can</p> <p>5 migrate from the vulva and perineum up through the</p> <p>6 uterus and onto the ovaries.</p> <p>7 Q. Now I need you to answer my question. Do you</p> <p>8 need me to repeat it?</p> <p>9 MS. O'DELL: Well, Counsel, won't you</p> <p>10 be courteous of the witness. He answered your</p> <p>11 question. You may not have liked the answer. And you</p> <p>12 happy to ask another question.</p> <p>13 MR. ZELLERS: No, he did not answer my</p> <p>14 question.</p> <p>15 MS. O'DELL: He did answer your</p> <p>16 question.</p> <p>17 MR. ZELLERS: The record will reflect</p> <p>18 he did not. And I think both of us, all of us, are</p> <p>19 being cordial and professional.</p> <p>20 If, at any time, Dr. Clarke-Pearson, you</p> <p>21 don't think I'm being professional, let me know.</p> <p>22 Okay?</p> <p>23 THE WITNESS: Sure.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. My specific question to you is can you cite</p>

<p style="text-align: right;">Page 90</p> <p>1 any study, animal or human, that traces externally</p> <p>2 applied talc up through the reproductive tract to the</p> <p>3 ovaries?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: So by study, you mean a</p> <p>6 peer-reviewed publication?</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. Yes.</p> <p>9 A. I cannot.</p> <p>10 MR. ZELLERS: Let's take a break.</p> <p>11 THE VIDEOGRAPHER: Going off the record</p> <p>12 at 10:50 a.m.</p> <p>13 (Recess taken from 10:50 a.m. to 11:04 a.m.)</p> <p>14 THE VIDEOGRAPHER: Back on record at</p> <p>15 11:04 a.m.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Dr. Clarke-Pearson, do you treat women who</p> <p>18 have ovarian cancer and other gynecological disease?</p> <p>19 A. I've treated hundreds of women with ovarian</p> <p>20 cancer, put them through radical surgical procedures,</p> <p>21 including bowel resections and removing their spleen</p> <p>22 to get their cancer out. I've given them</p> <p>23 chemotherapy. We've had some successes. I've taken</p> <p>24 care of a lot of patients throughout the remainder of</p> <p>25 their life as they died from ovarian cancer.</p>	<p style="text-align: right;">Page 92</p> <p>1 several theories as to the origin of ovarian cancer;</p> <p>2 is that right?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: Yes.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Do you agree that, although some risk</p> <p>7 factors, like age or BRCA genetic mutations have been</p> <p>8 identified, it's impossible to say for sure what the</p> <p>9 cause of ovarian cancer was for any individual woman?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: Well, we know that the</p> <p>12 cause is a genetic mutation that allows the ovarian</p> <p>13 cancer -- that ovarian cell that was normal to become</p> <p>14 a malignant cell and loses its regulation and growth.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Do you agree, though, that it is impossible</p> <p>17 to say for sure what the cause of ovarian cancer was</p> <p>18 for any individual woman?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: The cause is always a</p> <p>21 gene mutation.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. Is it your testimony that you are able to</p> <p>24 identify the cause of ovarian cancer in all cases?</p> <p>25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 91</p> <p>1 So to answer your question, yes.</p> <p>2 Q. Do you also counsel women who are at high</p> <p>3 risk for ovarian cancer?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: Yes.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. Ovarian cancer is a complex disease; correct?</p> <p>8 A. Cancer, in general, is a complex disease.</p> <p>9 I wish we knew more about it.</p> <p>10 Q. No one knows for sure how ovarian cancer</p> <p>11 develops; is that right?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: I think we have some</p> <p>14 strong opinions based on scientific research, and we</p> <p>15 continue to research further in terms of the genetics</p> <p>16 and mutations that go along with developing ovarian</p> <p>17 cancer.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. Is it true that no one knows for sure how</p> <p>20 ovarian cancer develops?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: I guess no one knows for</p> <p>23 sure.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. You refer in your report to there being</p>	<p style="text-align: right;">Page 93</p> <p>1 THE WITNESS: I can't identify the gene</p> <p>2 mutation in all cases, no.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Is it impossible to say for sure what gene</p> <p>5 mutation or other cause of ovarian cancer was for any</p> <p>6 individual woman?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: In some individual women,</p> <p>9 we can identify the cause, for example, the mutation</p> <p>10 of the BRCA1 and 2 gene. We can also do genetic</p> <p>11 profiling more and more these days, identifying a</p> <p>12 number of gene mutations that then lead to the</p> <p>13 malignancy.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Other than BRCA1 and 2, do you agree that it</p> <p>16 is impossible to say for sure what the cause of</p> <p>17 ovarian cancer was for any individual woman?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: There are more gene</p> <p>20 mutations than BRCA 1 and 2. There's PD1 and others</p> <p>21 that I don't have off the top of my head that are now</p> <p>22 being identified.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Other than when a specific gene mutation can</p> <p>25 be identified, is it impossible to say for sure what</p>

<p style="text-align: right;">Page 94</p> <p>1 the cause of ovarian cancer was for any individual 2 woman?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: In -- to answer your 5 question, what I think I understand your question 6 being, if we can't identify a gene mutation, then we 7 don't know what caused it. Is that what you're asking 8 me?</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. Yes.</p> <p>11 A. Then the answer would be, yes, we don't know.</p> <p>12 Q. In your practice, do you diagnose what caused 13 your patients' ovarian cancer?</p> <p>14 A. We do genetic profiling, as is a relatively 15 new approach to trying to approach causes, and also 16 personalized treatment for patients with ovarian 17 cancer.</p> <p>18 Q. Other than genetic profiling, in your 19 practice do you diagnose what caused your patients' 20 ovarian cancer?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: We don't. There's no -- 23 I don't think anybody can.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. In your practice, do you tell your patients</p>	<p style="text-align: right;">Page 96</p> <p>1 then also advise.</p> <p>2 Q. As of today, it's not part of the patient 3 intake form; is that right?</p> <p>4 A. As of today, no.</p> <p>5 Q. As of today, the University of North Carolina 6 and the department that you chair do not advise women 7 that perineal use of talcum powder causes ovarian 8 cancer; correct?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: That's correct.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Do you teach residents about talc as a 13 potential risk factor?</p> <p>14 A. It is listed as a potential risk factor 15 today, and I think in the very near future it will be 16 considered a risk factor and a causative factor.</p> <p>17 Q. When did you first start doing that, teaching 18 residents about talc as a potential risk factor?</p> <p>19 A. Well, I think it's been in the literature for 20 a good while as a potential risk factor.</p> <p>21 Q. My question is when did you first begin 22 teaching residents about talc as a potential risk 23 factor?</p> <p>24 A. I think from the time that I was starting to 25 teach residents in 1975 -- well, I was a resident in</p>
<p style="text-align: right;">Page 95</p> <p>1 what caused their ovarian cancer other than with 2 respect to genetic profiling?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: No.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Have you ever given any presentation on the 7 relationship between talcum powder and ovarian cancer?</p> <p>8 A. No.</p> <p>9 Q. Have you ever spoken at a conference or 10 meeting of the American College of Obstetricians and 11 Gynecologists, or ACOG, about the relationship between 12 talcum powder and ovarian cancer?</p> <p>13 A. Not that I recall.</p> <p>14 Q. Have you ever spoken at a conference or 15 meeting of the Society of Gynecologic Oncology, or 16 SGO, about the relationship between talcum powder and 17 ovarian cancer?</p> <p>18 A. No.</p> <p>19 Q. Does your institution, the University of 20 North Carolina, advise women that perineal use of 21 talcum powder causes ovarian cancer?</p> <p>22 A. Well, again, back to my point of the tipping 23 point in this whole discussion. And so at this 24 juncture, we are considering adding that to our 25 patient intake form, to ask for that information, and</p>	<p style="text-align: right;">Page 97</p> <p>1 '75 -- 1979 when I finished my residency and started 2 teaching residents.</p> <p>3 Q. Do you today ask any of your own patients if 4 they used talcum powder as a routine screening 5 question?</p> <p>6 A. I think that would be very inappropriate for 7 a woman who has advanced ovarian cancer to try to find 8 and cause her to feel guilt that she did something to 9 cause ovarian cancer. My situation is one of trying 10 to take care of women that have ovarian cancer.</p> <p>11 Q. Have you ever told a patient that talcum 12 powder caused her ovarian cancer?</p> <p>13 A. No.</p> <p>14 Q. Have you ever recommended increased screening 15 or monitoring for ovarian cancer based on a patient's 16 prior use of talcum powder products?</p> <p>17 A. Not yet.</p> <p>18 Q. Have you ever recommended that a patient who 19 had a history of using talcum powder undergo 20 prophylactic surgery to remove the fallopian tubes or 21 ovaries because of her talcum powder use?</p> <p>22 A. I think that is likely to become a discussion 23 in the near future, and we would have to balance the 24 risks of surgery versus the risks of developing 25 ovarian cancer.</p>

<p style="text-align: right;">Page 98</p> <p>1 Q. As of today, you have not; is that right?</p> <p>2 A. That's correct.</p> <p>3 Q. Have you ever asked your patients about their</p> <p>4 exposure to asbestos in the course of taking their</p> <p>5 medical histories?</p> <p>6 A. No.</p> <p>7 Q. Are you familiar with screenings for asbestos</p> <p>8 exposure?</p> <p>9 A. I'm not familiar with that.</p> <p>10 Q. Do you ask your patients about their</p> <p>11 occupational history?</p> <p>12 A. I often -- yes, most of the time I find out</p> <p>13 what the patient does outside the home.</p> <p>14 Q. Do you ask your patients about the</p> <p>15 occupational history of their parents?</p> <p>16 A. I do not.</p> <p>17 Q. Do you ask your patients about their spouse's</p> <p>18 occupational history?</p> <p>19 A. Sometimes.</p> <p>20 Q. Do you ask what kind of buildings your</p> <p>21 patients have either lived in or do live in?</p> <p>22 A. No.</p> <p>23 Q. Do you ask about the kind of buildings that</p> <p>24 your patients either work in or have worked in?</p> <p>25 A. Have not.</p>	<p style="text-align: right;">Page 100</p> <p>1 A. All right. I think I can answer this. This</p> <p>2 is a long time ago.</p> <p>3 Q. As -- and let me just repeat my question, and</p> <p>4 I'm specifically looking at the statement toward the</p> <p>5 bottom of the third column on page 1 of the</p> <p>6 publication.</p> <p>7 The study concluded that p53 mutations in</p> <p>8 ovarian cancer arise because of spontaneous errors in</p> <p>9 DNA synthesis and repair rather than the direct</p> <p>10 interaction of carcinogens with DNA; is that right?</p> <p>11 A. That's what it reads.</p> <p>12 Q. That would be inconsistent with the idea that</p> <p>13 exposure to talcum powder causes errors in DNA</p> <p>14 synthesis and repair that lead to cancer; is that</p> <p>15 right?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: No, that's not -- that's</p> <p>18 not correct.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. Why is that not correct?</p> <p>21 A. So the inflammatory response of the ovarian</p> <p>22 epithelium to talcum powder then leads to gene</p> <p>23 mutations, and there is mounting evidence that that's</p> <p>24 happening in work that's being written and presented</p> <p>25 by Dr. Saed in particular.</p>
<p style="text-align: right;">Page 99</p> <p>1 Q. In 1993 you coauthored an article on the</p> <p>2 mutations of the p53 gene and ovarian cancer; is that</p> <p>3 right?</p> <p>4 A. I believe so. I was a coauthor.</p> <p>5 Q. That study concluded that p53 mutations in</p> <p>6 ovarian cancer arise because of spontaneous errors in</p> <p>7 DNA synthesis and repair rather than direct</p> <p>8 interaction with -- strike that -- rather than the</p> <p>9 direct interaction of carcinogens with DNA; is that</p> <p>10 right?</p> <p>11 MS. O'DELL: He needed --</p> <p>12 THE WITNESS: I would have to see that</p> <p>13 paper. 1993 was a long time ago. It was kind of our</p> <p>14 lab. And I was not in the lab, but I was a coauthor.</p> <p>15 MR. ZELLERS: Deposition Exhibit 16 is</p> <p>16 the paper on which you were an author. First named</p> <p>17 author was Kohler.</p> <p>18 (Exhibit No. 16 was marked for identification.)</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. Take just a quick look at that, and I have a</p> <p>21 specific question for you.</p> <p>22 This is your paper that you were a coauthor</p> <p>23 on back in 1993; is that right?</p> <p>24 A. Allow me to read this a little bit more.</p> <p>25 Q. Sure.</p>	<p style="text-align: right;">Page 101</p> <p>1 Q. Does your paper -- the 1993 paper -- discuss</p> <p>2 inflammation?</p> <p>3 A. No. That wasn't part of the question that</p> <p>4 was being pursued in this laboratory investigation.</p> <p>5 Q. Your paper in 1983 [sic] states that</p> <p>6 (as read):</p> <p>7 "Consistent with data from</p> <p>8 epidemiologic studies that failed</p> <p>9 to demonstrate a convincing</p> <p>10 relationship between ovarian</p> <p>11 cancer and exposure to</p> <p>12 environmental carcinogens."</p> <p>13 Is that right?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. And I'm looking again at the first page of</p> <p>17 your article at the bottom -- or right above the line</p> <p>18 in the third column.</p> <p>19 A. You've read that correctly. I would have to</p> <p>20 reread this paper -- it's more than 20 years old --</p> <p>21 because I'm not continue -- I'm not currently aware of</p> <p>22 the investigation that we did looking at carcinogens.</p> <p>23 Q. In 2009, you published an article entitled</p> <p>24 "Screening for Ovarian Cancer." Is that right?</p> <p>25 A. I'd have to see the article.</p>

<p style="text-align: right;">Page 102</p> <p>1 MR. ZELLERS: We'll mark your 2009</p> <p>2 article as Deposition Exhibit 17.</p> <p>3 (Exhibit No. 17 was marked for identification.)</p> <p>4 THE WITNESS: Yes. Okay.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. This is an article that you authored; is that</p> <p>7 right?</p> <p>8 A. Yes, it was printed in The New England</p> <p>9 Journal. I was invited to write this clinical review.</p> <p>10 Q. This is an article that is captioned</p> <p>11 "Screening for Ovarian Cancer." Is that right?</p> <p>12 A. Yes.</p> <p>13 Q. This is many years before you were retained</p> <p>14 by Dr. Thompson and plaintiffs' counsel in the talcum</p> <p>15 powder litigation; is that right?</p> <p>16 A. Yes.</p> <p>17 Q. In this article, you discussed risk factors</p> <p>18 for ovarian cancer. And I'm looking at the second</p> <p>19 paragraph on page 1.</p> <p>20 A. The first page of -- page 170?</p> <p>21 Q. Yes. And my question, specifically, is you</p> <p>22 only discussed in this article the risk factors of</p> <p>23 family history of ovarian or breast cancer and the</p> <p>24 BRCA genetic mutations; is that right?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 104</p> <p>1 A. I don't recall that, but it may be on the</p> <p>2 videotape that you probably have.</p> <p>3 Q. You did not tell the viewers that talcum</p> <p>4 powder was associated with or a cause of ovarian</p> <p>5 cancer; is that right?</p> <p>6 A. That's correct, because at that point in time</p> <p>7 I didn't believe it was causative.</p> <p>8 Q. It wasn't until after being retained in this</p> <p>9 case, and around the time that you concluded your</p> <p>10 review in November of 2018, that you formed that</p> <p>11 opinion; correct?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 Excuse me. Go ahead.</p> <p>14 THE WITNESS: As I was preparing to</p> <p>15 offer an opinion, I did this review and came to that</p> <p>16 opinion, yes.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. If we try to put a time on it, it would be</p> <p>19 toward the latter part of 2018, once you had completed</p> <p>20 your review that you've told us about in connection</p> <p>21 with this litigation; correct?</p> <p>22 A. Yes.</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. Where do practicing gynecological oncologists</p>
<p style="text-align: right;">Page 103</p> <p>1 THE WITNESS: That's what appears to</p> <p>2 be, yes.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. You did not mention talcum powder in this</p> <p>5 article; is that right?</p> <p>6 A. It appears I didn't mention several other</p> <p>7 risk factors. That wasn't the intent of this article.</p> <p>8 Q. Well, in July of 2014, you appeared on a FOX</p> <p>9 News station to discuss ovarian cancer; do you</p> <p>10 remember that?</p> <p>11 A. Vaguely.</p> <p>12 Q. That was before you were retained by</p> <p>13 Dr. Thompson and by plaintiffs' counsel in this case;</p> <p>14 correct?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: Yes.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. As part of that discussion, you were asked</p> <p>19 and talked about risk factors for ovarian cancer.</p> <p>20 Do you recall that?</p> <p>21 A. No.</p> <p>22 Q. Do you recall that, in that interview in</p> <p>23 2014, July, you only mentioned age, family history of</p> <p>24 breast or ovarian cancer, and BRCA genetic mutations</p> <p>25 as risk factors?</p>	<p style="text-align: right;">Page 105</p> <p>1 look for guidance on what the risk factors are for</p> <p>2 ovarian cancer?</p> <p>3 A. I think a variety of sources, from --</p> <p>4 published in many textbooks, review articles.</p> <p>5 Q. Well, just as you don't have the time to go</p> <p>6 and research each and every potential risk factor for</p> <p>7 ovarian cancer in depth, you rely on certain</p> <p>8 organizations to do that research for you; right?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: And other researchers,</p> <p>11 yes.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. One organization would be the American</p> <p>14 College of Obstetricians and Gynecologists, or ACOG;</p> <p>15 is that right?</p> <p>16 A. Yes.</p> <p>17 Q. Another organization would be the Society of</p> <p>18 Gynecologic Oncology, or SGO; is that right?</p> <p>19 A. Yes.</p> <p>20 Q. Another would be the National Cancer</p> <p>21 Institute's physician data queries?</p> <p>22 A. I probably wouldn't turn to that, but it's</p> <p>23 information available to the public.</p> <p>24 Q. That's generally thought to be reliable</p> <p>25 information; correct?</p>

<p style="text-align: right;">Page 106</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I'm not quite certain.</p> <p>3 I'm not familiar with that. Is this a PDQ you're</p> <p>4 talking about?</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. A PDQ. But you're familiar, certainly, with</p> <p>7 the National Cancer Institute; right?</p> <p>8 A. Yes.</p> <p>9 Q. The National Cancer Institute has funded at</p> <p>10 least some of the studies that you have been involved</p> <p>11 in; is that right?</p> <p>12 A. As basic research and research into ovarian</p> <p>13 cancer treatment, not necessarily risk factors.</p> <p>14 Q. Is it a reputable organization, the National</p> <p>15 Cancer Institute?</p> <p>16 A. It's an agency that sponsors cancer research,</p> <p>17 by and large.</p> <p>18 Q. Is that a "yes"?</p> <p>19 A. There -- they're reputable in terms of</p> <p>20 sponsoring cancer research.</p> <p>21 Q. You're a member of ACOG; is that right?</p> <p>22 A. Yes, sir.</p> <p>23 Q. You're a member of SGO; is that right?</p> <p>24 A. Yes.</p> <p>25 Q. You were the president of SGO from 2009 to</p>	<p style="text-align: right;">Page 108</p> <p>1 caused by talcum powder will be reflected in those</p> <p>2 statements in the future.</p> <p>3 Q. You don't have any reason to believe that the</p> <p>4 physicians at ACOG and SGO have not kept up to date</p> <p>5 with the talc and ovarian cancer epidemiology, do you?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: I think that they haven't</p> <p>8 looked at this question as in depth as I have.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. How do you know that?</p> <p>11 A. I'm quite certain of that.</p> <p>12 Q. Well --</p> <p>13 A. This is a huge amount of work, to spend 80</p> <p>14 hours reviewing materials to come to my opinion. I'm</p> <p>15 not aware of any other physician that's been tasked</p> <p>16 with that job, if you will.</p> <p>17 Q. Are there not committees on both ACOG and SGO</p> <p>18 that look into risk factors and potential causes for</p> <p>19 ovarian cancer?</p> <p>20 A. I have served as the committee chair for the</p> <p>21 GYN Management Committee at ACOG, which publishes</p> <p>22 committee opinions. And I've also served on the</p> <p>23 practice committee, which puts out technical</p> <p>24 bulletins, now called practice bulletins.</p> <p>25 In both cases, ACOG is asked by a member to</p>
<p style="text-align: right;">Page 107</p> <p>1 2010; is that right?</p> <p>2 A. Yeah.</p> <p>3 Q. You've served on a number of committees for</p> <p>4 both ACOG and SGO; is that right?</p> <p>5 A. Yes.</p> <p>6 Q. Do you agree, generally, that the doctors and</p> <p>7 scientists in organizations like ACOG and SGO are</p> <p>8 working very hard to protect women's health?</p> <p>9 A. Yes.</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. And, in forming your opinions in this case,</p> <p>13 did you consider the risk factors that ACOG and SGO</p> <p>14 recognized for ovarian cancer?</p> <p>15 A. I was familiar with the existing risk factors</p> <p>16 that had been identified.</p> <p>17 Q. Are you aware that, even as of today, in</p> <p>18 their patient-facing websites as well as in their</p> <p>19 publicly available information about ovarian cancer,</p> <p>20 neither ACOG nor SGO identify perineal use of talcum</p> <p>21 powder as a risk factor for ovarian cancer?</p> <p>22 A. Again, I'm getting back to my point that</p> <p>23 we're at a point in time where it's a tipping point.</p> <p>24 And so, yes, right now, that's not posted. And</p> <p>25 I would imagine that my opinion that ovarian cancer is</p>	<p style="text-align: right;">Page 109</p> <p>1 consider investigating and writing an opinion about</p> <p>2 that. So if the opinion was requested by an ACOG</p> <p>3 member, that committee would then decide whether they</p> <p>4 wanted to pursue that or not.</p> <p>5 Q. Does ACOG and SGO have committees who</p> <p>6 generally look at the risk factors for ovarian cancer?</p> <p>7 A. Only if that committee is asked to look at</p> <p>8 that question.</p> <p>9 Q. Any member of ACOG or any member of SGO can</p> <p>10 ask either ACOG or SGO and their respective committees</p> <p>11 to look at and evaluate a particular risk factor;</p> <p>12 correct?</p> <p>13 A. Yes. Sure.</p> <p>14 Q. And it's your testimony that that's never</p> <p>15 ever been done up until today?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: No, it's not my</p> <p>18 testimony. I don't know what's been requested of ACOG</p> <p>19 in the past or currently.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Would it be important to you to know that</p> <p>22 Centers for Disease Control and Prevention, the CDC,</p> <p>23 does not list talcum powder or talc as a risk factor</p> <p>24 for ovarian cancer?</p> <p>25 A. That doesn't surprise me.</p>

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1 Q. The same for the Mayo Clinic. The Mayo
2 Clinic does not list talc as a risk factor for ovarian
3 cancer; correct?
4 A. I'll take your word for it.
5 Q. Have you received funding from the National
6 Institutes of Health?
7 A. I've received funding from the National
8 Cancer Institute, and I have received funding for
9 physician training through the National Institutes of
10 Health for a women's reproductive health research
11 grant.
12 Q. Are you aware that NIH does not list talc as
13 a risk factor for ovarian cancer?
14 A. I would have to look at their publications.
15 That wouldn't surprise me, along with all the other
16 agencies and foundations and organizations that you've
17 listed previously.
18 Q. With respect to the National Cancer
19 Institute, they do publish guidance for physicians on
20 risk factors for cancer; is that right?
21 A. I believe so.
22 Q. Take a look at Deposition Exhibit 18.
23 (Exhibit No. 18 was marked for identification.)
24 BY MR. ZELLERS:
25 Q. Are you familiar with this publication of the

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1 National Cancer Institute?
2 A. No.
3 Q. This is not something that you reviewed in
4 all of your preparation and research for rendering
5 your opinions in this case?
6 A. I may have seen it, but I'm not familiar with
7 all the details of it.
8 Q. Well, did you review and rely on this
9 statement by the National Cancer Institute with regard
10 to ovarian, fallopian tube, and primary peritoneal
11 cancer prevention in your review of this matter?
12 MS. O'DELL: Object to the form.
13 THE WITNESS: It did not contribute to
14 my formation of my opinion, if that's what you're
15 asking.
16 BY MR. ZELLERS:
17 Q. Well, take a look, if you will, on page 12,
18 12 of 18, at the section "Perineal Talc Exposure."
19 Do you see that?
20 A. Yes.
21 Q. The National Cancer Institute states
22 (as read):
23 "The weight of evidence does not
24 support an association between
25 perineal talc exposure and an

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1 increased risk of ovarian cancer."
2 Is that right?
3 A. That's what they say.
4 Q. If you go to 18 of 18, this statement was
5 updated as of January 4th of 2019; is that right?
6 MS. O'DELL: Object to the form.
7 THE WITNESS: Yes, I see they updated
8 that.
9 And I think that I do recall having seen
10 this. And my recollection is that their references
11 are not fully up to date too. And also, it befuddles
12 me that the National Cancer Institute -- is that
13 right? -- National Cancer Institute, going back to
14 page 12, would take statistically significant clinical
15 studies and dismiss that clinical significance -- a
16 relative risk of 1.44, a relative risk of 1.26 -- I'm
17 sorry -- 1.71, a relative risk of 1.2 -- and say that
18 they're not important.
19 BY MR. ZELLERS:
20 Q. You have no personal knowledge of the
21 analysis done by the National Cancer Institute that
22 underlie this statement; correct?
23 A. I don't, and I have a hard time understanding
24 how they came to the conclusions they have.
25 Q. Well, let's look at the FDA. The FDA has

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1 also looked at this issue, has looked at the Bradford
2 Hill factors, and has concluded that causation has not
3 been established as between talcum powder use --
4 peritoneal -- perineal talcum powder use and ovarian
5 cancer; is that right?
6 MS. O'DELL: Object to the form.
7 THE WITNESS: I'd have to see the
8 publication.
9 BY MR. ZELLERS:
10 Q. Well, let's take a look.
11 I'm handing you what we have marked as
12 Deposition Exhibit 19.
13 (Exhibit No. 19 was marked for identification.)
14 BY MR. ZELLERS:
15 Q. This is a letter from the FDA. It has a date
16 stamp at the top, April 1, 2014. It's addressed to
17 Dr. Epstein at the University of Illinois in Chicago.
18 A. I think I have seen this one.
19 Q. FDA is another governmental entity; is that
20 right?
21 A. Yes.
22 Q. As far as you know, the FDA is not biased one
23 way or the other with respect to the food and drug
24 issues that they research and opine on; is that right?
25 MS. O'DELL: Object to the form.

<p style="text-align: right;">Page 114</p> <p>1 THE WITNESS: No, that's incorrect. In</p> <p>2 my personal experience, the FDA has done a bad job in</p> <p>3 evaluating the risk of morcellation of uterine</p> <p>4 fibroids. The data that they based their black box</p> <p>5 opinion on in November of 2014 was based on inadequate</p> <p>6 review of the medical literature. And it was biased</p> <p>7 and I think clearly influenced by some outside</p> <p>8 sources.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. Do you have criticisms of the FDA's review</p> <p>11 and investigation of talcum powder products?</p> <p>12 A. I would like to reread this, because I did</p> <p>13 have some criticism in reading this.</p> <p>14 Q. Well, my question is more general. But you</p> <p>15 would agree --</p> <p>16 A. Yes, I have criticism. I think that they're</p> <p>17 not sufficiently evaluating all the data and evidence</p> <p>18 that's here.</p> <p>19 Q. Does the FDA have qualified scientists and</p> <p>20 medical professionals that look at various issues,</p> <p>21 including talcum powder?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: They probably have</p> <p>24 qualified people that sometimes make mistakes or</p> <p>25 sometimes have biases of their own.</p>	<p style="text-align: right;">Page 116</p> <p>1 the pile.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. You have notes that are other than what you</p> <p>4 brought here today?</p> <p>5 MS. O'DELL: I think it's in -- may be</p> <p>6 in your stack, Doctor. I'm not sure. I don't have</p> <p>7 it --</p> <p>8 THE WITNESS: Well, I'll go through it.</p> <p>9 My recall of this is this letter is all over</p> <p>10 the place in terms of pros and cons and pros and cons.</p> <p>11 So we can work my way through it, but -- go ahead.</p> <p>12 I'm on page 4.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. All right. The FDA goes through and reviews</p> <p>15 epidemiology and etiology findings; is that right?</p> <p>16 A. That's where they start, yes.</p> <p>17 Q. The FDA noted, in reviewing this issue,</p> <p>18 genital use of talcum powder and ovarian cancer, that</p> <p>19 "selection bias and/or uncontrolled confounding result</p> <p>20 in spurious positive associations" --</p> <p>21 A. I'm sorry. Can you just take me to where you</p> <p>22 are on page 4?</p> <p>23 Q. Sure. Let's look -- if we're on page 4,</p> <p>24 right above the findings or conclusion, it says</p> <p>25 (as read):</p>
<p style="text-align: right;">Page 115</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. But do you agree that, on scientific issues,</p> <p>3 including the one that we're here to talk about today,</p> <p>4 whether or not talcum powder -- genital use of talcum</p> <p>5 powder is a risk factor for ovarian cancer, that's a</p> <p>6 topic on which well-qualified scientists and</p> <p>7 physicians may have differing views?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: They may have differing</p> <p>10 views, yes.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Let's look at this publication from the FDA.</p> <p>13 Turn to page 4, if you will. And we are looking at</p> <p>14 Deposition Exhibit 21. Are you at page 4?</p> <p>15 MS. O'DELL: Are we at 21 or 19?</p> <p>16 MR. ZELLERS: Oh, I'm sorry.</p> <p>17 I misspoke. Thank you, Ms. O'Dell. Yes. So let me</p> <p>18 ask that question again.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. Turn, if you will, Doctor, to page 4 of</p> <p>21 Deposition Exhibit 19.</p> <p>22 THE WITNESS: Ms. O'Dell, may I have --</p> <p>23 I have some notes on this letter.</p> <p>24 MS. O'DELL: Is it in your --</p> <p>25 THE WITNESS: No, I don't think it's in</p>	<p style="text-align: right;">Page 117</p> <p>1 "After consideration of the" --</p> <p>2 A. My page 4 doesn't have findings and</p> <p>3 conclusions. "Epidemiology and etiology findings"?</p> <p>4 Q. Yes. So we're on the same page --</p> <p>5 A. Above this (indicating)?</p> <p>6 Q. Underneath "epidemiology and etiology</p> <p>7 findings" --</p> <p>8 A. Okay.</p> <p>9 Q. -- if we go to the second paragraph, it</p> <p>10 states (as read):</p> <p>11 "After consideration of the</p> <p>12 scientific literature submitted in</p> <p>13 support of both citizen petitions,</p> <p>14 FDA found..."</p> <p>15 Are you with me?</p> <p>16 A. Yes, I am.</p> <p>17 Q. All right. No. 2 (as read):</p> <p>18 "The FDA noted that no single</p> <p>19 study has considered all the</p> <p>20 factors that potentially</p> <p>21 contribute to ovarian cancer,</p> <p>22 including selection bias and/or</p> <p>23 uncontrolled confounding that</p> <p>24 result in spurious positive</p> <p>25 associations between talc use and</p>

<p style="text-align: right;">Page 118</p> <p>1 ovarian cancer."</p> <p>2 Did I read that correctly?</p> <p>3 A. Yes.</p> <p>4 Q. You would agree that there are limitations on</p> <p>5 case-control studies; is that right?</p> <p>6 A. Yes, there are.</p> <p>7 Q. There are difficulties in interpreting a</p> <p>8 retrospective case-control study; is that right?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: I'm not sure what you</p> <p>11 mean by "difficulties."</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Well, are there limitations in interpreting a</p> <p>14 retrospective case-control study?</p> <p>15 A. There can be.</p> <p>16 Q. What are those limitations that you're aware</p> <p>17 of based upon your experience?</p> <p>18 A. Well, it depends upon how the study is</p> <p>19 designed, in terms of the size of the study, the --</p> <p>20 how the -- you know, recall issue is always an issue</p> <p>21 when you're dealing with patients retrospectively.</p> <p>22 There are similar problems in cohort studies</p> <p>23 as well.</p> <p>24 Q. My question is very simple.</p> <p>25 What are you aware of in terms of</p>	<p style="text-align: right;">Page 120</p> <p>1 A. That's with regard -- in the first part of</p> <p>2 their sentence to "no single study."</p> <p>3 Q. Let's look at Conclusion 3.</p> <p>4 "The FDA concludes that results of</p> <p>5 case-control studies do not</p> <p>6 demonstrate a consistent positive</p> <p>7 association across studies."</p> <p>8 Is that right?</p> <p>9 MS. O'DELL: Objection.</p> <p>10 THE WITNESS: That's wrong. You read</p> <p>11 it right; it's wrong.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. You disagree with the FDA's conclusion; is</p> <p>14 that right?</p> <p>15 A. Yes.</p> <p>16 Q. And I'm going to ask you all about that</p> <p>17 today --</p> <p>18 A. Okay.</p> <p>19 Q. -- so you'll have to chance to tell me why</p> <p>20 you disagree.</p> <p>21 Did the FDA also state that, at least based</p> <p>22 upon its review of the epidemiology and etiology</p> <p>23 findings, that a dose response -- strike that -- that</p> <p>24 dose response evidence is lacking?</p> <p>25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 119</p> <p>1 limitations of retrospective case-control studies?</p> <p>2 MS. O'DELL: Object to the form. Asked</p> <p>3 and answered.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. That generally apply to case-control studies.</p> <p>6 MS. O'DELL: Object to the form. Asked</p> <p>7 and answered.</p> <p>8 THE WITNESS: Well, there are</p> <p>9 limitations in probably -- there's a variety of</p> <p>10 limitations, depending upon the particular studies.</p> <p>11 So I think we would have to get down to a particular</p> <p>12 study. And I don't hang my weight -- or hang my hat</p> <p>13 or put the weight of my opinion on a single study.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Well, you would agree that selection bias is</p> <p>16 a potential concern in case-control studies; correct?</p> <p>17 A. It can be.</p> <p>18 Q. And uncontrolled confounding is a potential</p> <p>19 concern in case-control studies; is that right?</p> <p>20 A. Yes. But if your controls are well selected,</p> <p>21 then that negates much of the bias.</p> <p>22 Q. And, at least in this document, the FDA</p> <p>23 states that "those result in spurious positive</p> <p>24 associations between talc use and ovarian cancer</p> <p>25 risk"; is that right?</p>	<p style="text-align: right;">Page 121</p> <p>1 THE WITNESS: And can you show me where</p> <p>2 you're reading that?</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Sure. Conclusion 3, last part of the</p> <p>5 statement.</p> <p>6 A. There is dose response evidence. It's not in</p> <p>7 every single study, but we are aware of dose</p> <p>8 response --</p> <p>9 Q. Doctor, my question was, was it the FDA's</p> <p>10 conclusion, based upon the epidemiology that it</p> <p>11 reviewed as of 2014, that dose response evidence is</p> <p>12 lacking?</p> <p>13 A. That's the FDA's opinion; that's not my</p> <p>14 opinion.</p> <p>15 Q. Finally, the FDA found that "a cogent</p> <p>16 biological mechanism was lacking." And I'm looking at</p> <p>17 number 4, "A cogent biological mechanism by which talc</p> <p>18 might lead to ovarian cancer is lacking."</p> <p>19 Is that the statement of the FDA, at least</p> <p>20 as of 2014?</p> <p>21 A. The statement goes on in the same sentence to</p> <p>22 say (as read):</p> <p>23 "Exposure to talc does not account</p> <p>24 for all cases of ovarian cancer."</p> <p>25 Nothing accounts for all cases of ovarian</p>

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<p>1 cancer. I can't believe the FDA would even say</p> <p>2 something like this.</p> <p>3 Q. Are you able to answer my question without</p> <p>4 editorializing?</p> <p>5 A. I answered your question. I have to finish</p> <p>6 the whole sentence that you want me to read.</p> <p>7 Q. Did the FDA state, as of 2014, that "a cogent</p> <p>8 biological mechanism by which talc might lead to</p> <p>9 ovarian cancer is lacking"?</p> <p>10 MS. O'DELL: Object to the form. Asked</p> <p>11 and answered.</p> <p>12 THE WITNESS: That's what half of the</p> <p>13 sentence says. That's what the FDA wrote.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. All right. IARC, you're certainly familiar</p> <p>16 with IARC. You brought your whole monograph here with</p> <p>17 you today; is that right?</p> <p>18 A. Yes.</p> <p>19 MS. O'DELL: Object to the form. It's</p> <p>20 not his monograph; it's not the whole monograph --</p> <p>21 it's multiple monographs, as you know. So don't --</p> <p>22 don't be --</p> <p>23 MR. ZELLERS: I haven't gone through it</p> <p>24 page by page, but it looks like it's about a</p> <p>25 2-inch-thick monograph that he brought with him today.</p>	<p>1 rejected classification of talc as carcinogenic and</p> <p>2 instead assigned it to the classification of possibly</p> <p>3 carcinogenic to humans?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: I think that was an IARC</p> <p>6 publication in the mid 2000s. And I'm aware of it,</p> <p>7 yes.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Are you generally familiar with the IARC</p> <p>10 categories?</p> <p>11 A. Generally, but I'm happy to walk through them</p> <p>12 with you.</p> <p>13 Q. Sure. Doctor, I show you Exhibit 20.</p> <p>14 (Exhibit No. 20 was marked for identification.)</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. This is a one-page listing of the agents</p> <p>17 classified by the IARC monographs, Volumes 1 to 123,</p> <p>18 and it lists out the different categories that IARC</p> <p>19 classifies agents within.</p> <p>20 You're generally familiar with --</p> <p>21 A. Yes.</p> <p>22 Q. -- with these classifications; is that right?</p> <p>23 A. Yes, sir.</p> <p>24 Q. Looking at Exhibit 20, there are 120 agents</p> <p>25 in Group 1, "carcinogenic to humans"; is that right?</p>
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<p>1 BY MR. ZELLERS:</p> <p>2 Q. My question is, are you familiar with IARC?</p> <p>3 A. I am.</p> <p>4 Q. All right. IARC has addressed Bradford Hill</p> <p>5 considerations with respect to talc used in a perineal</p> <p>6 manner with respect to women -- is that right? -- in</p> <p>7 ovarian cancer?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: You're asking me a</p> <p>10 question, not what the FDA is writing here now but</p> <p>11 what IARC has said?</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. I'm now on to IARC. So let me ask my</p> <p>14 question.</p> <p>15 Based upon your review of the IARC</p> <p>16 monographs, it has addressed the Bradford Hill</p> <p>17 considerations; is that right?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 Are you referring to all the monographs?</p> <p>20 Are you referring to a certain topic that's --</p> <p>21 because, as you know, there are multiple monographs</p> <p>22 and they relate to different substances. So, for your</p> <p>23 specific question, that might be helpful.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. Are you aware, Dr. Clarke-Pearson, that IARC</p>	<p>1 A. Yes.</p> <p>2 Q. That's the only category in which IARC finds</p> <p>3 sufficient evidence in humans; is that right?</p> <p>4 A. That's my understanding.</p> <p>5 Q. And there's 82 agents in Group 2A, "probably</p> <p>6 carcinogenic to humans"; is that right?</p> <p>7 A. I see that.</p> <p>8 Q. It appears that IARC isn't shy about</p> <p>9 declaring something to be either a known or a probable</p> <p>10 carcinogen; is that right?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: I don't know about being</p> <p>13 shy. They have their listing from their --</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Well, they have over 200 agents in those two</p> <p>16 categories; is that right?</p> <p>17 A. Yes.</p> <p>18 Q. There's only one agent in Group 4, "probably</p> <p>19 not carcinogenic to humans"; is that right?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: That's what it says.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. So out of the over a thousand agents that</p> <p>24 IARC has reviewed, IARC has placed only one agent in</p> <p>25 Group 4, "probably not carcinogenic"?</p>

<p style="text-align: right;">Page 126</p> <p>1 A. Yes.</p> <p>2 Q. IARC doesn't have a Group 5, "not</p> <p>3 carcinogenic," do they?</p> <p>4 A. Not on this sheet.</p> <p>5 Q. With genital talc, IARC has classified</p> <p>6 genital talc as a Group 2B category agent; is that</p> <p>7 right?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: I'm not sure. It's just</p> <p>10 genital talc. Isn't the talcum powder of all forms?</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Talcum powder is a Group 2B agent, "possibly</p> <p>13 carcinogenic to humans"; is that right?</p> <p>14 A. Yes.</p> <p>15 Q. That designation is based, according to the</p> <p>16 IARC definitions, on limited evidence in humans; is</p> <p>17 that right?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: I would have to read what</p> <p>20 is written.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Is it your understanding that, in classifying</p> <p>23 talcum powder as a Group 2B agent, that IARC cannot</p> <p>24 rule out chance, bias, or confounding with reasonable</p> <p>25 confidence; correct?</p>	<p style="text-align: right;">Page 128</p> <p>1 I just have a few general questions.</p> <p>2 A. All right. Well, please go ahead.</p> <p>3 Q. Well, are you able to tell me, generally,</p> <p>4 what association the literature reports between talc</p> <p>5 use and ovarian cancer?</p> <p>6 A. The literature consistently shows an</p> <p>7 increased risk of developing ovarian cancer in women</p> <p>8 that are exposed to talcum powder.</p> <p>9 Q. Generally, it's around a 1.3 odds ratio in</p> <p>10 the case-control studies; is that fair?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: I would acknowledge that,</p> <p>13 yes.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. All right. Do you also acknowledge that the</p> <p>16 epidemiologists consider a 1.3 odds ratio in</p> <p>17 case-control studies to be a weak or modest</p> <p>18 association?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 THE WITNESS: I'm not sure what they</p> <p>21 mean by "weak" or "modest."</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. Would you categorize it as a weak or modest</p> <p>24 association?</p> <p>25 A. No. I would call it a statistically</p>
<p style="text-align: right;">Page 127</p> <p>1 A. I suppose you're reading that from some IARC</p> <p>2 statement that I don't have, but...</p> <p>3 Q. That's generally your understanding; correct?</p> <p>4 A. That would be generally my understanding,</p> <p>5 yes.</p> <p>6 Q. Are you aware of some of the other agents</p> <p>7 that have been designated as 2B agents by IARC as</p> <p>8 possibly carcinogenic?</p> <p>9 A. I am not.</p> <p>10 Q. Ginkgo biloba? Are you familiar with that?</p> <p>11 A. No.</p> <p>12 Q. Occupational carpentry and joinery?</p> <p>13 MS. O'DELL: I'm sorry. I missed that</p> <p>14 last one. What did you say?</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Occupational carpentry and joinery.</p> <p>17 A. I was not aware of that.</p> <p>18 Q. Pickled vegetables?</p> <p>19 A. I've heard that.</p> <p>20 Q. All right. What association does the</p> <p>21 literature report between talc use and ovarian cancer?</p> <p>22 A. Well, now we move into looking at</p> <p>23 epidemiology, in my opinion.</p> <p>24 Q. Well, these are just a few general questions.</p> <p>25 If you need to look at your folders, please do. But</p>	<p style="text-align: right;">Page 129</p> <p>1 significant observation that impacts the lives of</p> <p>2 thousands of women that I've taken care of over the</p> <p>3 years and that, if talcum powder were not on the</p> <p>4 market and being used in perineal hygiene, for lack of</p> <p>5 a better word, many other women would not have died of</p> <p>6 ovarian cancer that I've taken care of.</p> <p>7 MR. ZELLERS: Move to strike as</p> <p>8 nonresponsive.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. You are unaware as to whether or not an</p> <p>11 epidemiologist would consider a 1.3 odds ratio in a</p> <p>12 case-control study to be a weak or modest association;</p> <p>13 is that right?</p> <p>14 A. I don't understand the definition of "weak"</p> <p>15 or "modest."</p> <p>16 Q. You're not an epidemiologist; is that right?</p> <p>17 A. That's correct.</p> <p>18 Q. Can you point to any peer-reviewed literature</p> <p>19 on talc and ovarian cancer that states that 1.3 odds</p> <p>20 ratio is a strong association?</p> <p>21 A. I think --</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: -- it's a statistically</p> <p>24 significant association that's been consistently</p> <p>25 reported in case-control studies and in meta-analyses.</p>

<p style="text-align: right;">Page 130</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. I take it that's no to my question. Is that</p> <p>3 right? And I'll ask it again if you'd like me to.</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 I think he answered your question.</p> <p>6 THE WITNESS: I'm not aware that it's a</p> <p>7 strong association or a weak association. It's a</p> <p>8 statistically significant association.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. You cannot point me to any peer-reviewed</p> <p>11 literature on talc and ovarian cancer that states that</p> <p>12 1.3 is a strong association; correct?</p> <p>13 MS. O'DELL: Object to the form. Asked</p> <p>14 and answered.</p> <p>15 THE WITNESS: That's correct.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. IARC does not refer to this as a strong</p> <p>18 association; correct?</p> <p>19 A. I'm not familiar with what IARC says.</p> <p>20 Q. FDA does not refer to this as a strong</p> <p>21 association; correct?</p> <p>22 A. I'm not aware.</p> <p>23 Q. The National Cancer Institute does not refer</p> <p>24 to this as a strong association; correct?</p> <p>25 A. I'm not aware what they said about strong or</p>	<p style="text-align: right;">Page 132</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I'm not sure that</p> <p>3 question --</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. I thought it was a good question. I can try</p> <p>6 to do it again, but, did you not understand that</p> <p>7 question?</p> <p>8 A. I think what you're trying to get at is does</p> <p>9 talcum powder have equal carcinogenic effect resulting</p> <p>10 in different types of epithelial ovarian cancers?</p> <p>11 Q. Yes.</p> <p>12 A. Okay. So different types of epithelial</p> <p>13 ovarian cancers are separated into several -- and we</p> <p>14 believe there are several different mechanisms that</p> <p>15 cause them. So in the past, they've been lumped into</p> <p>16 epithelial ovarian cancers; but, in fact, the biology</p> <p>17 of mucinous tumors -- cancers -- are different than</p> <p>18 serous cancers.</p> <p>19 Based on the epidemiologic evidence that</p> <p>20 I've seen, there is a preponderance of impact on women</p> <p>21 that have serous carcinomas of the ovary, which is the</p> <p>22 most common ovarian cancer; and because it is the most</p> <p>23 common, it's more likely we're going to see a</p> <p>24 statistical association as opposed to a rarer cancer</p> <p>25 like a mucinous cancer.</p>
<p style="text-align: right;">Page 131</p> <p>1 weak.</p> <p>2 Q. Do your opinions on causation and strength of</p> <p>3 association apply equally to all forms of ovarian</p> <p>4 cancer?</p> <p>5 A. No.</p> <p>6 Q. Are you able to break down your opinion with</p> <p>7 respect to ovarian cancer?</p> <p>8 A. Yeah. So there are three types of ovarian</p> <p>9 cancer: germ cell, sex cord-stromal, and epithelial</p> <p>10 ovarian cancers. I have no evidence that sex</p> <p>11 cord-stromal tumors or germ cell tumors are associated</p> <p>12 with the use of talcum powder, although they are rare</p> <p>13 cancers, so it would take much larger populations to</p> <p>14 really fully investigate that issue.</p> <p>15 Q. Do you -- strike that.</p> <p>16 Does your opinion on strength of association</p> <p>17 and causation apply equally to all forms of epithelial</p> <p>18 ovarian cancer?</p> <p>19 A. Reading the literature, it appears that there</p> <p>20 is some variation in terms of impact that talcum</p> <p>21 powder might have on some forms of ovarian cancer.</p> <p>22 Q. Tell us what your opinions with the different</p> <p>23 subtypes of epithelial ovarian cancer and whether or</p> <p>24 not they are either a risk factor or a causative</p> <p>25 factor for ovarian cancer.</p>	<p style="text-align: right;">Page 133</p> <p>1 So that is my answer to your question.</p> <p>2 Q. Do your opinions as to talcum powder used in</p> <p>3 the perineal area being a risk factor and/or a</p> <p>4 causative factor for serous ovarian cancer also apply</p> <p>5 to mucinous ovarian cancer?</p> <p>6 A. I think the association is weaker for</p> <p>7 mucinous.</p> <p>8 Q. How about for endometrioid?</p> <p>9 A. I think some studies have suggested</p> <p>10 endometrioid is increased risk with talcum powder.</p> <p>11 Q. Is it weaker?</p> <p>12 A. Is it weaker?</p> <p>13 Q. Than serous.</p> <p>14 A. Than serous? I'm not certain of that.</p> <p>15 Q. Clear cell, is it weaker than serous?</p> <p>16 A. I'm not certain of that because clear cell is</p> <p>17 a very rare cancer.</p> <p>18 Q. On page 8 of your report, you say that</p> <p>19 (as read):</p> <p>20 "The strength of association</p> <p>21 between talcum powder and ovarian</p> <p>22 cancer is critically important</p> <p>23 because of severity and frequency</p> <p>24 of ovarian cancer."</p> <p>25 Is that right?</p>

<p style="text-align: right;">Page 134</p> <p>1 A. That's what I say.</p> <p>2 Q. Do you believe that ovarian cancer is a</p> <p>3 frequently occurring disease?</p> <p>4 A. In my practice it is. It occurs in 22,400</p> <p>5 women a year in the United States, and about 14,000 of</p> <p>6 those women will ultimately die of their cancer.</p> <p>7 Q. What is your support for that?</p> <p>8 A. My support for that data, the incidence of</p> <p>9 ovarian cancer?</p> <p>10 Q. Yes.</p> <p>11 A. Well, I may have rounded it off and it may</p> <p>12 not be exact, but the American -- I mean the American</p> <p>13 Cancer Society, the SEER database. Those would be two</p> <p>14 sources of information that count the annual incidence</p> <p>15 of ovarian cancer and the mortality from ovarian</p> <p>16 cancer.</p> <p>17 Q. When you examine a causation, are you more</p> <p>18 likely to consider a lower association causal if the</p> <p>19 disease is severe or frequent?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: Let me read your question</p> <p>22 again.</p> <p>23 I'm not sure what you mean by "lower</p> <p>24 association."</p> <p>25</p>	<p style="text-align: right;">Page 136</p> <p>1 exhibit copy.</p> <p>2 A. Sure.</p> <p>3 Q. We have marked this one as Exhibit 21.</p> <p>4 (Exhibit No. 21 was marked for identification.)</p> <p>5 THE WITNESS: Okay.</p> <p>6 MS. O'DELL: Feel free to look at your</p> <p>7 own copy if you'd rather, Doctor.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Do you have Exhibit 21?</p> <p>10 A. Yes. You gave me two copies. Here, let me</p> <p>11 give you one back.</p> <p>12 Q. Ah, okay.</p> <p>13 You have both the exhibit copy I gave you,</p> <p>14 which is not highlighted, and you have your own</p> <p>15 personal highlighted copy of the study; is that right?</p> <p>16 A. Yes, sir.</p> <p>17 Q. On page 7 of your report, you address this</p> <p>18 meta-analysis by Langseth; is that right?</p> <p>19 A. I've lost track of my report, but as soon as</p> <p>20 I get to it -- here we go.</p> <p>21 Q. Your report is Exhibit 5; is that right?</p> <p>22 A. I have one that's not marked, but go ahead.</p> <p>23 Q. Well, turn to page 7.</p> <p>24 A. Mm-hmm.</p> <p>25 Q. And do you see in your chart you have</p>
<p style="text-align: right;">Page 135</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. You have told us in your report that "the</p> <p>3 strength of association between talcum powder and</p> <p>4 ovarian cancer is critically important because of the</p> <p>5 severity and frequency of ovarian cancer."</p> <p>6 Is that right?</p> <p>7 A. Yes, that's right.</p> <p>8 Q. My question is, when you examine causation,</p> <p>9 are you more likely to consider a lower association</p> <p>10 causal if the disease is severe or frequent?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: No, it doesn't have</p> <p>13 anything to do with my opinion as to what the</p> <p>14 causation is.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Langseth, 2008, that is a study that you have</p> <p>17 reviewed and that you rely upon for your opinions in</p> <p>18 this case; is that right?</p> <p>19 A. I believe so. It's one of the meta-analyses,</p> <p>20 as I recall.</p> <p>21 Q. Are you familiar with the Langseth</p> <p>22 publication?</p> <p>23 A. I have read it, and I think it's of value,</p> <p>24 but --</p> <p>25 Q. Take a look at -- I'm going to hand you the</p>	<p style="text-align: right;">Page 137</p> <p>1 identified Langseth as one of the six articles that</p> <p>2 you have pulled out and highlighted in your paper; is</p> <p>3 that right?</p> <p>4 A. Yes.</p> <p>5 Q. And you list the odds ratio found by Langseth</p> <p>6 and the other authors in that paper to be 1.40; is</p> <p>7 that right?</p> <p>8 A. That's correct.</p> <p>9 Q. Go to Figure 1 on page 359 of the Langseth</p> <p>10 article, Exhibit 21.</p> <p>11 Do you have that?</p> <p>12 A. Yes.</p> <p>13 Q. And Langseth lists 20 case-control studies;</p> <p>14 is that right?</p> <p>15 A. I believe so.</p> <p>16 Q. Of those 20 studies, only 10 have</p> <p>17 statistically significant results; is that right?</p> <p>18 A. I'm going to have to go through each one, so</p> <p>19 give me a moment here.</p> <p>20 I count 11.</p> <p>21 Q. You count 11 that found a statistical</p> <p>22 significance?</p> <p>23 A. Where the confidence interval does not</p> <p>24 overlap 1.</p> <p>25 Q. Well, we have Cramer; correct?</p>

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<p>1 A. Yes.</p> <p>2 Q. Second, Harlow; correct?</p> <p>3 A. Yes.</p> <p>4 Q. Cramer again; correct?</p> <p>5 A. Yes.</p> <p>6 Q. Purdie; is that right?</p> <p>7 A. Yes.</p> <p>8 Q. Chang?</p> <p>9 A. Yes.</p> <p>10 Q. Cook?</p> <p>11 A. Yes.</p> <p>12 Q. Green?</p> <p>13 A. Yep.</p> <p>14 Q. Cramer?</p> <p>15 A. Yep.</p> <p>16 Q. Ness?</p> <p>17 A. Yes.</p> <p>18 Q. Mills?</p> <p>19 A. Yes.</p> <p>20 Q. That's 10. You see another one?</p> <p>21 A. Okay. I'm sorry. I counted the pooled odds</p> <p>22 ratio population-based studies. So 10. Yes, I agree</p> <p>23 with you.</p> <p>24 Q. So out of the 20 case-control studies that</p> <p>25 are cited by Langseth and that you rely on for your</p>	<p>1 what 10 out of 20 we're talking about.</p> <p>2 MS. O'DELL: Sorry, Doctor. Object to</p> <p>3 the form. Asked and answered.</p> <p>4 You may answer his question.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Generally, if you flip a coin 20 times, are</p> <p>7 you going to get 10 heads and 10 tails?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: Statistically, yes.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. All right. Is it your opinion that 10 out of</p> <p>12 20 means there are consistent results across</p> <p>13 studies --</p> <p>14 A. That's where a meta-analysis puts weight onto</p> <p>15 some studies more than others.</p> <p>16 Q. The --</p> <p>17 A. -- and comes up with a conclusion that this</p> <p>18 is a statistically significant finding, pooling all of</p> <p>19 these papers.</p> <p>20 Q. Langseth is just looking at the case-control</p> <p>21 studies; is that right?</p> <p>22 A. Yes.</p> <p>23 Q. Langseth concluded -- and the authors</p> <p>24 concluded -- that causation should be rejected and</p> <p>25 that more study is needed; is that right?</p>
Page 139	Page 141
<p>1 opinions in this matter, only 10 of the 20 have</p> <p>2 statistically significant results; is that right?</p> <p>3 A. Yes.</p> <p>4 Q. Is this the first time that you've done that</p> <p>5 exercise, that you've actually looked at the 20</p> <p>6 studies and determined that only 10 of them have</p> <p>7 statistically significant results?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: No. I didn't go through</p> <p>10 every -- to count -- let me read your question again.</p> <p>11 I was not aware of the exact count that you</p> <p>12 brought to my attention. On the other hand, I think</p> <p>13 that this paper results in a statistically significant</p> <p>14 finding. That's the beauty of a meta-analysis.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Would you agree that 10 out of 20 is no</p> <p>17 better than a coin toss?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: You're misusing</p> <p>20 epidemiologic data.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Would you agree that 10 out of 20 is no</p> <p>23 better than a coin toss?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: You'll have to tell me</p>	<p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I'd have to see where</p> <p>3 that's written.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. Well, look under -- so same page, underneath</p> <p>6 our table, see where it says "Proposal to research</p> <p>7 community"?</p> <p>8 A. Yes.</p> <p>9 Q. (As read):</p> <p>10 "The current body of experimental</p> <p>11 and epidemiological evidence is</p> <p>12 insufficient to establish a causal</p> <p>13 association between perineal use</p> <p>14 of talc and ovarian cancer risk."</p> <p>15 Did I read that correctly?</p> <p>16 A. You read that correctly.</p> <p>17 Q. Would you agree that you're drawing</p> <p>18 conclusions from this study that are broader than the</p> <p>19 study authors' own conclusions?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: My opinion is not based</p> <p>22 on just this study; it's based on all of the studies</p> <p>23 that I have in my report where there's a consistency</p> <p>24 across all meta-analyses that there's a statistically</p> <p>25 increased risk of ovarian cancer in women exposed to</p>

<p style="text-align: right;">Page 142</p> <p>1 perineal talc. Those confidence intervals in all of 2 those meta-analyses are statistically significant. 3 MR. ZELLERS: Move to strike as 4 nonresponsive. 5 BY MR. ZELLERS 6 Q. Are these -- at least with the Langseth 7 paper, you've gone further than what the authors have 8 concluded; correct? 9 MS. O'DELL: Object to the form. 10 THE WITNESS: I'm developing my opinion 11 on the totality of the evidence that I have reviewed. 12 BY MR. ZELLERS: 13 Q. Please answer my question. Just on the 14 Langseth paper -- 15 A. My opinion is not based on the Langseth 16 paper. 17 Q. I understand. But with respect to Langseth 18 and the opinions that you've drawn from Langseth, 19 you've gone further in your conclusions than the 20 Langseth paper authors; correct? 21 A. No, I do not. 22 MS. O'DELL: Excuse me. 23 Object to the form. Misstates his 24 testimony. 25 You may repeat your answer if you'd like.</p>	<p style="text-align: right;">Page 144</p> <p>1 A. That's right. 2 Q. You just discuss the case-control studies and 3 then the meta-analyses; is that right? 4 A. That's correct. 5 MS. O'DELL: Object to the form. 6 BY MR. ZELLERS 7 Q. The cohort studies do not show a 8 statistically significant association between talc use 9 and ovarian cancer; is that right? 10 A. The cohort studies were not designed to 11 answer that question. They're poorly done and I don't 12 think contribute to this discussion. 13 Q. Is that a "yes," that the cohort studies do 14 not show a statistically significant association 15 between talc use and ovarian cancer? 16 A. The way they're written and studied and 17 reported, you're correct. 18 Q. Berge 2017, that's a paper you've got in one 19 of your folders that we went through earlier today. 20 And you're generally familiar with that study; is that 21 right? 22 A. Yes. 23 Q. In Berge, the authors concluded that 24 (as read): 25 "The positive association between</p>
<p style="text-align: right;">Page 143</p> <p>1 THE WITNESS: My conclusions are not 2 based on only Langseth. That is a piece of 3 information that I've used in formulating my opinion. 4 BY MR. ZELLERS: 5 Q. Consistency is one of the Bradford Hill 6 factors; is that right? 7 A. Yes, sir. 8 Q. On page 6 of your report, you discuss the 9 epidemiological studies on talcum powder and ovarian 10 cancer; is that right? 11 A. Yes. 12 Q. In the second paragraph, under 13 "Epidemiology," you state (as read): 14 "When looking at these 15 epidemiologic studies and their 16 totality, the data shows a 17 consistent statistically 18 significant increased risk of 19 developing EOC [epithelial ovarian 20 cancer] with perineal talcum 21 powder use." 22 Is that right? 23 A. Yes, sir. 24 Q. In looking at this section, you don't discuss 25 or address the cohort studies at all; is that right?</p>	<p style="text-align: right;">Page 145</p> <p>1 talc use and ovarian cancer 2 appears to be limited to serous 3 histologic type and to 4 case-control studies." 5 Do you agree with that? 6 A. Yes. 7 Q. How can you validate completely excluding 8 cohort studies from your discussion? 9 MS. O'DELL: Object to the form. 10 THE WITNESS: Because I don't think 11 they contribute one way or the other. They're poorly 12 designed, poorly executed, and the data that they 13 provide does not inform us at all. 14 And, in fact, these meta-analyses, in many 15 cases, included the cohort studies and still came out 16 with statistically significant increased risk of 17 ovarian cancer. 18 BY MR. ZELLERS: 19 Q. It was appropriate for you to exclude the 20 cohort studies from your discussion; correct? 21 MS. O'DELL: Object -- 22 THE WITNESS: I did -- 23 MS. O'DELL: Excuse me. Object to the 24 form. Misstates his testimony. 25 You may answer.</p>

<p style="text-align: right;">Page 146</p> <p>1 THE WITNESS: This table back here</p> <p>2 that's got all these papers on it, we excluded.</p> <p>3 They're not in my discussion. I considered them, and</p> <p>4 I didn't think that they contributed to the</p> <p>5 information that I needed to present in my report.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. You state that Penninkilampi shows that the</p> <p>8 cohort studies support a statistically -- well, strike</p> <p>9 that.</p> <p>10 I want to ask you a few questions about the</p> <p>11 cohort studies.</p> <p>12 Did you review the Gates 2010 cohort study?</p> <p>13 A. Yes.</p> <p>14 Q. The Gates 2010 cohort study found that there</p> <p>15 was not a statistically significant relationship for</p> <p>16 the serous invasive subtype of ovarian cancer; is that</p> <p>17 right?</p> <p>18 A. I believe that's true, from my recollection.</p> <p>19 Q. Berge 2017 shows that the cohort studies do</p> <p>20 not support a statistically significant relationship</p> <p>21 between perineal talc use and ovarian cancer for any</p> <p>22 subtype; is that right?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: This is Berge's analysis</p> <p>25 of the cohort studies and Berge's meta-analysis. Is</p>	<p style="text-align: right;">Page 148</p> <p>1 Q. You're aware that one of the studies --</p> <p>2 another one of the meta-analyses that you cite to,</p> <p>3 Penninkilampi 2018, excludes the Gates 2010 cohort</p> <p>4 study; right?</p> <p>5 A. I believe so.</p> <p>6 Q. How did you make a determination to weigh</p> <p>7 Penninkilampi more heavily than Berge?</p> <p>8 They're both meta-analyses; correct?</p> <p>9 A. Right.</p> <p>10 Q. Why did you make a determination to weigh</p> <p>11 Penninkilampi 2018 and place greater weight on it than</p> <p>12 the Berge study?</p> <p>13 MS. O'DELL: Object to the form.</p> <p>14 THE WITNESS: I don't think</p> <p>15 I necessarily placed greater weight on it. I've told</p> <p>16 you how I weight studies, and they all contribute to</p> <p>17 the totality of my opinion.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. Did you -- well, strike that.</p> <p>20 Isn't it a problem that Penninkilampi 2018</p> <p>21 does not factor in the data from the Gates 2010 study,</p> <p>22 given that the Gates study tends to negate an</p> <p>23 association between perineal talc use and ovarian</p> <p>24 cancer?</p> <p>25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 147</p> <p>1 that the paper you're talking about?</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. Yes. 2017.</p> <p>4 A. I presume, if you're reading it, that's what</p> <p>5 he says.</p> <p>6 Q. Well, I'm looking at Berge 2017, page 6, left</p> <p>7 column, at the bottom (as read):</p> <p>8 "This positive association appears</p> <p>9 to be limited to serous histologic</p> <p>10 type and the case-control</p> <p>11 studies."</p> <p>12 We covered that earlier; correct?</p> <p>13 A. Yes.</p> <p>14 MS. O'DELL: What page, please?</p> <p>15 MR. ZELLERS: Page 6.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. We're in agreement on that; correct, Doctor?</p> <p>18 MS. O'DELL: Object to the form. Give</p> <p>19 him a moment.</p> <p>20 THE WITNESS: Yes, he says that in his</p> <p>21 abstract.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. You were aware that Berge 2017 included the</p> <p>24 Gates 2010 cohort study; is that right?</p> <p>25 A. Yes. It's in Figure 2.</p>	<p style="text-align: right;">Page 149</p> <p>1 THE WITNESS: I can't explain to you</p> <p>2 what Penninkilampi was thinking or why he chose to</p> <p>3 exclude it.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. Did you verify that the data that</p> <p>6 Penninkilampi reports is accurate?</p> <p>7 A. Have I gone through every single case-control</p> <p>8 study and verified every number that's in his tables?</p> <p>9 Q. Have you -- strike that.</p> <p>10 Penninkilampi purports to report odds</p> <p>11 ratios, lower limits and upper limits, for the</p> <p>12 individual studies; is that right?</p> <p>13 A. Yes.</p> <p>14 Q. Did you go back to verify that Penninkilampi</p> <p>15 was correct in his reporting of the results of those</p> <p>16 individual studies?</p> <p>17 A. Yeah, that's the question I was just asking</p> <p>18 you.</p> <p>19 No, I did not go back.</p> <p>20 Q. In determining the study is of high quality,</p> <p>21 would it be important to you that the authors are</p> <p>22 accurately reporting the odds ratios and the</p> <p>23 confidence intervals?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: I trust the peer review</p>

<p style="text-align: right;">Page 150</p> <p>1 process that resulted in this publication.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. If there were errors in reporting of the odds</p> <p>4 ratios or the confidence intervals, would that call</p> <p>5 into question the reliability of the study?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: It might.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Of the histological subtypes for epithelial</p> <p>10 ovarian cancer, do you consider endometrioid and clear</p> <p>11 cell to be related?</p> <p>12 A. No.</p> <p>13 Q. You do not consider endometrioid and clear</p> <p>14 cell ovarian cancer to be related?</p> <p>15 A. Only related in they fall into the</p> <p>16 classification of epithelial ovarian cancers.</p> <p>17 Q. Penninkilampi only found a statistically</p> <p>18 significant increased risk for serous and endometrioid</p> <p>19 ovarian cancers; is that right?</p> <p>20 A. Okay. Yes.</p> <p>21 MS. O'DELL: Let -- excuse me, Doctor.</p> <p>22 If you need to look at the --</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. You have Penninkilampi in front of you,</p> <p>25 right, Doctor?</p>	<p style="text-align: right;">Page 152</p> <p>1 May of 2018, European Journal of Cancer Prevention.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. Okay. So let's do this: Doctor, if you</p> <p>4 don't mind, hand me your copy. We'll mark that as</p> <p>5 Deposition Exhibit 23.</p> <p>6 MR. ZELLERS: For right now, I'm going</p> <p>7 to just put a No. 23. And, Ms. Court Reporter, if, at</p> <p>8 a break, you can put an official sticker on it.</p> <p>9 MS. O'DELL: I hate to even say this,</p> <p>10 but did we mark 22?</p> <p>11 MR. ZELLERS: Yes. So Deposition</p> <p>12 Exhibit 22 is the Berge 2017 paper.</p> <p>13 Deposition Exhibit 23 is the Berge</p> <p>14 publication that appeared in the European Journal of</p> <p>15 Cancer Prevention, dated May 2018.</p> <p>16 (Exhibit Nos. 22 and 23 were marked for</p> <p>17 identification.)</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. So I'm going to hand both of these back to</p> <p>20 you, Dr. Clarke-Pearson.</p> <p>21 MR. ZELLERS: I'm going to hand out my</p> <p>22 exhibit copies to counsel.</p> <p>23 Let me also, just so we have it in the</p> <p>24 record, we'll mark as Deposition Exhibit 24 the</p> <p>25 Penninkilampi meta-analysis that's referred to in the</p>
<p style="text-align: right;">Page 151</p> <p>1 A. I have.</p> <p>2 Q. And if you need to take any more time to</p> <p>3 answer any of my questions, please do.</p> <p>4 A. Okay.</p> <p>5 Q. Penninkilampi did not find a statistically</p> <p>6 significant increased risk for clear cell or mucinous</p> <p>7 ovarian cancer; is that right?</p> <p>8 A. Can you show me where you're reading it from?</p> <p>9 Q. Sure. Take a look at the abstract for the</p> <p>10 results.</p> <p>11 A. He says he found an increased risk of serous</p> <p>12 and endometrioid but not mucinous or clear cell.</p> <p>13 Q. And that's where I was going to. So our</p> <p>14 record is complete, let's mark -- well, let's mark</p> <p>15 both Berge 2017 -- we'll mark Berge 2017.</p> <p>16 MS. O'DELL: Mike, I think there's an</p> <p>17 updated Berge publication, 2018. Do you have the most</p> <p>18 up to date?</p> <p>19 MR. ZELLERS: Asking him a question</p> <p>20 about the Berge publication copyrighted 2017 that</p> <p>21 appeared in "Genital Use of Talc and Risk of Ovarian</p> <p>22 Cancer, a Meta-analysis." That's the one that I'm</p> <p>23 referring to and I believe the one that the doctor has</p> <p>24 identified in his materials.</p> <p>25 THE WITNESS: Actually, mine is from</p>	<p style="text-align: right;">Page 153</p> <p>1 doctor's report.</p> <p>2 (Exhibit No. 24 was marked for identification.)</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. All right, Doctor. Can I ask you some more</p> <p>5 questions?</p> <p>6 A. Let's go for it.</p> <p>7 Q. Does it make sense that an environmental</p> <p>8 exposure could increase the risk for endometrioid</p> <p>9 ovarian cancer but not clear cell ovarian cancer?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: Yes.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. How do you explain that finding?</p> <p>14 A. Well, we've talked about mutations</p> <p>15 previously, and I'll bring it up again, that different</p> <p>16 mutations occur that result in different types of</p> <p>17 cancers. And so the ovarian epithelium being exposed</p> <p>18 to talcum powder may develop different cancers,</p> <p>19 depending upon the impact that that talcum powder and</p> <p>20 its products have on that particular cell.</p> <p>21 Q. Do you believe -- and, I think, as you told</p> <p>22 us earlier -- that you find a stronger association</p> <p>23 between perineal talcum powder use and serous ovarian</p> <p>24 cancer than you find for endometrioid, clear cell, or</p> <p>25 mucinous ovarian cancer; is that right?</p>

<p style="text-align: right;">Page 154</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I think serous has the</p> <p>3 strongest association. But in some studies we see,</p> <p>4 just as you're quoting from the -- whichever the study</p> <p>5 is that we're looking at, that endometrioid -- the</p> <p>6 Penninkilampi study -- so serous and endometrioid is</p> <p>7 increased.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. But not clear cell or mucinous; correct?</p> <p>10 A. That's correct in this one study.</p> <p>11 Q. Do you believe that Penninkilampi 2018</p> <p>12 provides evidence that there's a biologically</p> <p>13 plausible mechanism by which talc can cause ovarian</p> <p>14 cancer?</p> <p>15 A. I don't recall, and I'm not seeing it as I do</p> <p>16 a quick scan, that he addresses mechanisms of</p> <p>17 cancer -- carcinogenesis. I wouldn't expect that in</p> <p>18 an epidemiologic study.</p> <p>19 Q. Penninkilampi specifically states that</p> <p>20 (as read):</p> <p>21 "A certain causal link between</p> <p>22 talc use and ovarian cancer has</p> <p>23 not been established."</p> <p>24 Correct?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 156</p> <p>1 exposure at one point in time and never followed the</p> <p>2 patients subsequent to that to get some idea of</p> <p>3 frequency of use, whether the patient continued to use</p> <p>4 the talcum powder so that the real question is ever</p> <p>5 use. We don't know duration and frequency from these</p> <p>6 cohort.</p> <p>7 MR. ZELLERS: Move to strike as</p> <p>8 nonresponsive.</p> <p>9 MS. O'DELL: Oppose the motion.</p> <p>10 MR. ZELLERS: And, Counsel,</p> <p>11 I understand that anytime I do that, you will oppose</p> <p>12 it.</p> <p>13 MS. O'DELL: I just wanted to make it</p> <p>14 clear. Didn't want you to think I was asleep over</p> <p>15 here.</p> <p>16 MR. ZELLERS: I'm going to ask my</p> <p>17 question again.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. Dr. Clarke-Pearson, all of the cohort studies</p> <p>20 were prospective as opposed to retrospective; correct?</p> <p>21 A. They're prospective except for the fact that</p> <p>22 they don't continue to evaluate the ongoing use of</p> <p>23 talc in these patients. It was a point in time that</p> <p>24 the patient was asked whether she did or didn't use</p> <p>25 talc.</p>
<p style="text-align: right;">Page 155</p> <p>1 THE WITNESS: That's what he has</p> <p>2 written, and you've read it correctly.</p> <p>3 MS. O'DELL: Are you reading at a</p> <p>4 certain page, Counsel?</p> <p>5 MR. ZELLERS: Yes. I was reading from</p> <p>6 page 42, the end of the first paragraph.</p> <p>7 THE WITNESS: Okay. Right.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Did I read that correctly? It's the last</p> <p>10 statement in the first paragraph in the left-hand side</p> <p>11 (as read):</p> <p>12 "A certain causal link between</p> <p>13 talc use and ovarian cancer has</p> <p>14 not yet been established."</p> <p>15 Did I read that correctly?</p> <p>16 A. I'm sorry. I'm losing track of where you</p> <p>17 are. Are you up here?</p> <p>18 Q. Right here (indicating).</p> <p>19 A. Okay. Yes, you read it correctly.</p> <p>20 Q. Cohort studies are not affected by recall</p> <p>21 bias; is that right?</p> <p>22 A. Not by recall bias, no.</p> <p>23 Q. All of the cohort studies were prospective as</p> <p>24 opposed to retrospective; is that right?</p> <p>25 A. The cohort studies gathered information about</p>	<p style="text-align: right;">Page 157</p> <p>1 Q. The cohort studies were not subject to the</p> <p>2 same selection bias as retrospective case-control</p> <p>3 studies; is that right?</p> <p>4 A. That's true.</p> <p>5 Q. Recall bias is a concern in every</p> <p>6 retrospective study; correct?</p> <p>7 A. Yes.</p> <p>8 Q. Recall bias can distort a scientific</p> <p>9 evaluation of whether an exposure is actually related</p> <p>10 to a disease; correct?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: Let me read your question</p> <p>13 again.</p> <p>14 Recall bias has that risk of not being able</p> <p>15 to analyze the data.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. For example, recall bias could distort</p> <p>18 results if women with ovarian cancer were more likely</p> <p>19 to remember their exposure to talc than women without</p> <p>20 ovarian cancer; is that right?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: The issue in these large</p> <p>23 case-control trials is that we have many, many more</p> <p>24 women in them that have ovarian cancer. And,</p> <p>25 therefore, those potentially confounding factors get</p>

<p style="text-align: right;">Page 158</p> <p>1 worked out in most cases, and there is a consistency 2 across all of these studies. 3 BY MR. ZELLERS: 4 Q. I'm going to ask you about consistency. I'm 5 going to ask you about confounding factors. But, for 6 right now, please try to answer my question. 7 Recall bias could distort results if women 8 with ovarian cancer were more likely to remember their 9 exposure to talc than women without ovarian cancer; 10 correct? 11 A. Yes, that could distort the results. 12 Q. Recall bias could explain the fact that some 13 retrospective case-control studies have found a 14 statistically significant relationship between talcum 15 powder and ovarian cancer but the cohort studies have 16 not; correct? 17 MS. O'DELL: Object to the form. 18 THE WITNESS: (As read): 19 "Recall bias could explain the 20 fact that some retrospective 21 case-control studies have found a 22 statistically significant 23 relationship between talcum powder 24 and ovarian cancer?" 25 Yes, that's true.</p>	<p style="text-align: right;">Page 160</p> <p>1 case; is that right? 2 A. Yes. 3 Q. Schildkraut 2016 looked at, among other 4 things, what impact, if any, lawsuit filings in 2014 5 had had on whether women recalled using talc in the 6 past; is that right? 7 A. I think she tried to evaluate that, yes. 8 Q. The authors thought that the publicity from 9 the lawsuits might influence the participants' recall 10 of prior body powder use; is that right? 11 A. Yes. 12 Q. If we go to page 4 of Exhibit 25 -- 13 A. Page 1414, Table 2? 14 Q. Yeah. Page 1414, Table 2, the second column 15 shows the number of cases. That's women with ovarian 16 cancer; is that right? 17 A. Yes. 18 Q. The third column shows the controls. Those 19 are the women who do not have ovarian cancer; is that 20 right? 21 A. That's correct. 22 Q. Looking at this data, before 2014, before the 23 lawsuits, the percentage of controls -- meaning women 24 without ovarian cancer -- who said they used talc on 25 their genitals was 34 percent; is that right?</p>
<p style="text-align: right;">Page 159</p> <p>1 And then you go on to say "but the cohort 2 studies have not." 3 Have not found a statistically significant 4 relationship? That's true. The cohort studies 5 haven't found a statistically -- because the cohort 6 studies have many other confounding and inadequate 7 parts of their evaluation. 8 MR. ZELLERS: Move to strike as 9 nonresponsive. 10 BY MR. ZELLERS: 11 Q. You rely on the Schildkraut case-control 2016 12 study for your opinions about dose response; is that 13 right? 14 A. About what response? 15 Q. About dose response. 16 A. Dose response? That's one of the studies. 17 Q. All right. Take a look, if you will, please, 18 at Deposition Exhibit 25, which is the Schildkraut 19 2016 study cited and relied upon by you. 20 (Exhibit No. 25 was marked for identification.) 21 BY MR. ZELLERS: 22 Q. Do you have that in front of you? 23 A. Yes. You just handed it to me. 24 Q. And this is a study that you have previously 25 reviewed and you cite to in your materials in this</p>	<p style="text-align: right;">Page 161</p> <p>1 A. That's not in this table, I don't think, is 2 it? 3 Q. Take a look -- do you see, under "Exposure," 4 "Body powder use by location"? It's about eight lines 5 down, "Interview date, less than or earlier than 6 2014." 7 A. I'm with you, yeah. Okay. 8 Q. All right. So the percentage of controls -- 9 meaning women without ovarian cancer -- who said they 10 used talc on their genitals was 34 percent; is that 11 right? 12 A. I'm not seeing that. I see "interview date 13 less than 2014, never used." 14 Q. Then you go down to "any genital use." 15 A. Okay. "Any genital use, 34 percent," yes. 16 I see what you're saying. 17 Q. And then the percentage of cases -- meaning 18 women with ovarian cancer -- that they said used talc 19 on their genitals who were interviewed before 2014 was 20 36.5 percent; is that right? 21 A. Right. That's correct. 22 Q. So roughly the same reporting of genital talc 23 use between women with and without ovarian cancer 24 before the lawsuits were filed; is that right? 25 A. Yes.</p>

<p style="text-align: right;">Page 162</p> <p>1 Q. Now, look at what happened after the lawsuits 2 were filed. 3 A. I see. 4 Q. After 2014, what percent of women without 5 ovarian cancer said they used talc on their genitals? 6 A. 34.4 percent. 7 Q. So essentially the same as before; is that 8 right? 9 A. Yes. 10 Q. So, based on this data, the lawsuits had 11 essentially no effect on how many of the women without 12 ovarian cancer, the controls, remembered or recalled 13 using baby powder; is that right? 14 A. That seems to be true. 15 Q. For women with ovarian cancer, as we 16 discussed, before the lawsuits were filed, 17 36.5 percent of them said they recalled using baby 18 powder; is that right? 19 A. Yes. 20 Q. But after the lawsuits were filed, 21 the percent of women with ovarian cancer who said they 22 used baby powder went up to 51.5 percent; is that 23 right? 24 A. That's correct. 25 Q. So after the lawsuits were filed, the percent</p>	<p style="text-align: right;">Page 164</p> <p>1 BY MR. ZELLERS: 2 Q. At least according to the author, the women, 3 after a lawsuit was filed, with ovarian cancer 4 remembered using talc much more than the women without 5 ovarian cancer; correct? 6 A. Yes. 7 MS. O'DELL: Object to the form. 8 BY MR. ZELLERS: 9 Q. Those findings would be an example of the 10 potential effect of recall bias; is that right? 11 A. Yes. 12 MS. O'DELL: Object to the form. 13 BY MR. ZELLERS: 14 Q. What was your methodology for discounting the 15 effect of recall bias in the population-based 16 case-control studies? 17 A. My methodology was to rely on a skilled 18 epidemiologist like Dr. Schildkraut to work her way 19 through all of the data and come up to her 20 conclusions. 21 Q. Is there a rate of error in such a 22 methodology? 23 MS. O'DELL: Object to the form. 24 THE WITNESS: I'm not sure I know what 25 you mean by "rate of error."</p>
<p style="text-align: right;">Page 163</p> <p>1 of women with ovarian cancer who said they used baby 2 powder jumped by over 40 percent; is that right? 3 A. It went from 36.5 to 51.5. 4 Q. That's just over 40 percent; correct? That 5 increase? 6 A. From 36 to 51? 7 Q. Yes. 8 A. You're doing the math, but -- 9 Q. Well, it's a substantial increase. 10 A. Yes. 11 Q. Would you agree with that? 12 MS. O'DELL: Object to the form. 13 THE WITNESS: Yes. 14 BY MR. ZELLERS: 15 Q. All right. So, looking at this data, lawsuit 16 filings affected how many women with ovarian cancer 17 remembered using talc on their genitals but basically 18 had no effect on the memory of women without ovarian 19 cancer; correct? 20 MS. O'DELL: Object to the form. 21 THE WITNESS: I don't know that it -- 22 the hypothesis that Dr. Schildkraut puts out there is 23 that the lawsuit filings may have changed women's 24 recall, if you will. There may be other factors that 25 are involved here too.</p>	<p style="text-align: right;">Page 165</p> <p>1 BY MR. ZELLERS: 2 Q. Didn't the cohort studies involve a much 3 greater number of women than the case-control studies? 4 A. More women altogether, but less cancer cases. 5 Q. What was your methodology for weighing the 6 power of the cohort of studies versus the case-control 7 studies? 8 A. My methodology was to look at the issues 9 regarding cohort studies that are at fault, that are 10 defective in their trial design and the reporting of 11 their data. 12 Q. You're speaking about cohort studies in 13 general; is that right? 14 A. Well, three cohort studies. 15 Q. Is that right? But you're talking about the 16 studies in general as opposed to specific aspects of 17 the individual cohort studies? 18 A. We can go through the specifics of these 19 three studies. 20 Q. Well, Gates 2010, the Nurses' Health Study, 21 did you review that? 22 A. Yes. 23 Q. It was a follow-up to the cohort study Gertig 24 2000; is that right? 25 A. Yes.</p>

<p style="text-align: right;">Page 166</p> <p>1 Q. It's an analysis of data collected in the 2 Nurses' Health Study; correct? 3 A. Yes. 4 Q. The analysis included over 100,000 women; is 5 that right? 6 A. I believe so. 7 Q. The women in the Nurses' Health Study were 8 followed from 1976 to 2006, so for 30 years; is that 9 right? 10 A. The knowledge in this study by the study -- 11 the researchers doing the study did not gain any 12 information about exposure until 1982. 13 Q. After following over 100,000 women for three 14 decades, the data did not show a statistically 15 significant relationship between talcum powder use and 16 any type of epithelial ovarian cancer; is that 17 correct? 18 MS. O'DELL: Object to the form. 19 THE WITNESS: That's correct, and 20 there's many defects in the design of this study. 21 For example, the patients were never asked, 22 once again after 1982, whether they used or didn't use 23 talc or how frequently they used talc. 24 BY MR. ZELLERS: 25 Q. Well, let me ask you questions about that.</p>	<p style="text-align: right;">Page 168</p> <p>1 age 30; right? 2 A. That's what we've seen in other studies. 3 Q. So if a study asks women ages 36 to 61 if 4 they use talcum powder, it would capture the majority 5 of women who use genital powder during the follow-up 6 period; correct? 7 MS. O'DELL: Objection to form. 8 THE WITNESS: During the follow-up 9 period? 10 BY MR. ZELLERS: 11 Q. Yes. 12 A. No. It's a point in time. The question was 13 ever used up to 1982. 14 Q. It would capture the majority of women who 15 use, genital powder use; is that right? In this 16 study. 17 MS. O'DELL: Object to the form. 18 THE WITNESS: Up till 1982. 19 BY MR. ZELLERS: 20 Q. Houghton, 2014, the Women's Health Initiative 21 Study, did you review that study? 22 A. I did. 23 Q. That study involves over 61,000 women; is 24 that right? 25 A. And only 429 cases of ovarian cancer.</p>
<p style="text-align: right;">Page 167</p> <p>1 The Nurses' Health Study participants were 2 between the ages of 30 to 55 at the start of the study 3 in 1976; is that right? 4 A. I believe so. 5 MS. O'DELL: If you need to see it -- 6 THE WITNESS: I don't have -- well, 7 maybe I do have it here. 8 BY MR. ZELLERS: 9 Q. If you need to take a look at it -- do you 10 have it in front of you? I can give it to you if you 11 need it. 12 A. Okay. 13 Q. So my question is the Nurses' Health Study 14 participants were between the ages of 30 to 55 at the 15 start of the study in 1976; is that right? 16 A. Yes. 17 Q. They were asked about their talcum powder use 18 in 1982; is that right? 19 A. That's my understanding, yes. 20 Q. So they would have been between the ages of 21 36 and 61 when they were asked about their talcum 22 powder use; is that right? 23 A. Yes. 24 Q. Most women, as we have discussed, who used 25 talc in their perineal region start that use before</p>	<p style="text-align: right;">Page 169</p> <p>1 Q. Houghton 2014 did not find a statistically 2 significant relationship between perineal talc use and 3 ovarian cancer among women who had ever used talc; is 4 that right? 5 A. Yes. And this study was not powered to 6 identify -- 7 MS. O'DELL: If you need it. 8 THE WITNESS: -- the relative risk that 9 we're talking about in the cohort studies -- I mean 10 the case-control studies. Excuse me. 11 BY MR. ZELLERS: 12 Q. Or among women who had fewer than nine years 13 of perineal talc use; right? 14 A. That's what I believe. 15 Q. I'm looking at page 4, Houghton 2014, 16 Table 2. 17 A. Okay. The question again? Table 2? 18 Q. Yeah. The question is Houghton did not find 19 a statistically significant relationship between 20 perineal talc use and ovarian cancer among women who 21 had fewer than nine years of perineal talc use; right? 22 A. Yes. That sort of exposure is minimal. 23 Q. Or among women who had more than ten years of 24 perineal talc use; is that right? 25 A. Yes.</p>

<p style="text-align: right;">Page 170</p> <p>1 Q. And the same results for talcum powder on a 2 sanitary napkins or diaphragms; is that right? 3 A. Yes. 4 Q. Isn't it true that, when combined in a 5 meta-analysis, these cohort studies, the three that 6 we're talking about, have sufficient power to detect a 7 relative risk of 1.25? 8 A. I'm not aware that that -- how that 9 calculation was made. 10 Q. Did you consider the published power 11 calculation by Berge? 12 And so if you look at the Berge 2017 paper, 13 page 6, second column, first paragraph, Berge and his 14 coauthor states (as read): 15 "The statistical power of the 16 meta-analysis of these cohort 17 studies" -- 18 MS. O'DELL: I'm sorry, Mike. Where 19 are you reading? Page 6? 20 MR. ZELLERS: Page 6, second column, 21 first paragraph. 22 MS. O'DELL: Thank you. 23 MR. ZELLERS: Sure. 24 THE WITNESS: Second column. That's 25 what this looks like to me (indicating).</p>	<p style="text-align: right;">Page 172</p> <p>1 Q. Sure. 2 A. So he is saying that the cohort studies are 3 not powered to detect 1.25. 4 Q. What he is saying, I believe, is that the 5 cohort studies are powered to detect a relative risk 6 of 1.25, which was the basis for his conclusion in the 7 last sentence (as read): 8 "Thus low power of cohort studies 9 cannot be invoked as explanation 10 of the heterogeneity of results." 11 MS. O'DELL: Object to the form. 12 THE WITNESS: I read that with a 13 different understanding. 14 What he's saying is that the ability of the 15 cohort study is to detect a relative risk of 1.25 that 16 is similar to the results of the meta-analyses 17 case-control studies was only .99. 18 So those cohort studies aren't powered to 19 detect 1.25. 20 BY MR. ZELLERS: 21 Q. Does Berge conclude "Thus low power of cohort 22 studies cannot be invoked as explanation of the 23 heterogeneity of results"? 24 A. And I'm not sure what I mean -- what you mean 25 by -- what he means by "heterogeneity of results."</p>
<p style="text-align: right;">Page 171</p> <p>1 BY MR. ZELLERS: 2 Q. Looking at Exhibit 22. 3 A. I've got 23, which is the more recent paper. 4 Q. Well, take a look at 22, which is the year 5 before, 2017. And I'm looking at page 6. And I'm 6 looking at the last part of the first full paragraph 7 in the right-hand column. 8 Are you with me? 9 A. "The important feature of the present 10 meta-analysis"? 11 Q. Yes. 12 A. Okay. 13 Q. And so if we go down about two-thirds of the 14 way, Berge and the authors conclude (as read): 15 "The statistical power of the 16 meta-analysis of these cohort 17 studies to detect a relative risk 18 of 1.25, similar to the result of 19 the meta-analysis of case-control 20 studies, was 0.99. Thus low power 21 of cohort studies cannot be 22 invoked as an explanation of the 23 heterogeneity of results." 24 Do you see that? 25 A. Let me read it one more time, please.</p>	<p style="text-align: right;">Page 173</p> <p>1 Q. Did I read it correctly? 2 A. Yes, you read it correctly. 3 Q. All right. 4 You're familiar with the hospital-based 5 case-control studies; is that right? 6 A. They are part of the case-control studies, 7 yes. 8 Q. You agree with me that none of the 9 hospital-based case-control studies show a 10 statistically significant association between talc use 11 and ovarian cancer; is that right? 12 MS. O'DELL: Object to the form. 13 THE WITNESS: I would have to go back 14 to each one of those studies, sir. 15 BY MR. ZELLERS: 16 Q. Well, let's -- do you have Langseth there? 17 That might be an easy way to -- 18 A. I do. 19 Q. -- take a look at this. 20 We looked at the Langseth as Deposition 21 Exhibit 21. 22 A. I have it. 23 Q. And if we look at his table on page 359, he 24 lists out each of the hospital-based case-control 25 studies.</p>

<p style="text-align: right;">Page 174</p> <p>1 Do you see that?</p> <p>2 A. Right. Those are in the forest plot, yes.</p> <p>3 Q. None of the hospital-based case-control</p> <p>4 studies show a statistically significant association</p> <p>5 between talc use and ovarian cancer; correct?</p> <p>6 A. Yes.</p> <p>7 Q. The results of the hospital-based</p> <p>8 case-control studies are not consistent with the</p> <p>9 results of the population-based case-control studies;</p> <p>10 correct?</p> <p>11 A. That's right. That's why they're combined.</p> <p>12 Q. What methodology did you use to account for</p> <p>13 this lack of consistency between the population-based</p> <p>14 case-control studies and the hospital-based</p> <p>15 case-control studies?</p> <p>16 A. This is what the beauty of a meta-analysis</p> <p>17 is, where it brings together all the studies and comes</p> <p>18 to a conclusion. And the conclusion here is that</p> <p>19 there's a 1.35 risk of developing ovarian cancer in</p> <p>20 women who receive perineal talc.</p> <p>21 Q. Which Langseth and the other authors</p> <p>22 concluded was "insufficient to establish a causal</p> <p>23 association between perineal use of talc and ovarian</p> <p>24 cancer risk"; correct?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 176</p> <p>1 patients to hospitalized patients; is that right?</p> <p>2 A. Yes.</p> <p>3 Q. Whereas in a population-based study, you're</p> <p>4 more likely to be comparing ill people to healthy</p> <p>5 people; is that right?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: In a hospital-based</p> <p>8 study, the people are ill. That's why they're in the</p> <p>9 hospital.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. And they're compared to other ill people,</p> <p>12 other hospitalized patients; is that right?</p> <p>13 A. Yes.</p> <p>14 Q. There's a difference in the populations that</p> <p>15 are being studied between a hospital-based</p> <p>16 case-control study and a population-based case-control</p> <p>17 study; correct?</p> <p>18 A. Yes.</p> <p>19 Q. How did you account for selection bias in</p> <p>20 population case-control studies?</p> <p>21 A. I think if there was selection bias -- and</p> <p>22 I didn't control for selection bias, but if there was</p> <p>23 selection bias, first of all, it would be usually</p> <p>24 negated by the large number of patients in that study.</p> <p>25 Q. Even among the population-based case</p>
<p style="text-align: right;">Page 175</p> <p>1 THE WITNESS: It's statistically</p> <p>2 significant, which to a clinician means that we could</p> <p>3 reduce the risk of ovarian cancer if we eliminated</p> <p>4 talcum powder from the patients that are being exposed</p> <p>5 to it.</p> <p>6 MS. BOCKUS: Object. Nonresponsive.</p> <p>7 MR. ZELLERS: Joined.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Are you familiar with the term "selection</p> <p>10 bias"?</p> <p>11 A. Yes.</p> <p>12 Q. What does "selection bias" mean?</p> <p>13 A. Means that the selection of the patients in a</p> <p>14 particular study may be inappropriate, that they may</p> <p>15 not be the proper controls or the proper candidates to</p> <p>16 be included in the study.</p> <p>17 Q. You agree that hospital-based case-control</p> <p>18 studies may be less susceptible to selection bias than</p> <p>19 population-based case-control studies; correct?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: I'm not sure I believe</p> <p>22 that.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Well, hospital-based case-control studies,</p> <p>25 you're more likely to be comparing hospitalized</p>	<p style="text-align: right;">Page 177</p> <p>1 controls, some studies have shown statistically</p> <p>2 significant findings and some have not; is that right?</p> <p>3 A. Yes.</p> <p>4 Q. What is your methodology for weighing the</p> <p>5 lack of consistency in statistical significance across</p> <p>6 case-control studies?</p> <p>7 MS. O'DELL: Objection to form.</p> <p>8 THE WITNESS: That's where a</p> <p>9 meta-analysis becomes a very valuable tool.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. You agree that, if a study does not show a</p> <p>12 statistically significant association, it could mean</p> <p>13 that no risk exists; is that right?</p> <p>14 A. It's a possibility, yes.</p> <p>15 MS. O'DELL: Excuse me, Mike. When you</p> <p>16 get to a -- we've been going an hour and 45 minutes or</p> <p>17 so.</p> <p>18 MR. ZELLERS: Let's take a break.</p> <p>19 THE VIDEOGRAPHER: Going off the record</p> <p>20 at 12:46 p.m.</p> <p>21 (Recess taken from 12:46 p.m. to 1:45 p.m.)</p> <p>22 THE VIDEOGRAPHER: Back on record at</p> <p>23 1:45 p.m.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. Dr. Clarke-Pearson, in your report, page 7,</p>

<p style="text-align: right;">Page 178</p> <p>1 you have a table where you state that you reviewed six</p> <p>2 meta-analyses reported between 1995 and 2018; is that</p> <p>3 right?</p> <p>4 A. Yes. I overlooked adding Berge to this list.</p> <p>5 Q. What other studies did you overlook adding to</p> <p>6 this list?</p> <p>7 A. Subsequent to my report, there's also a</p> <p>8 meta-analysis by Taher.</p> <p>9 Q. Any other studies that you omitted from your</p> <p>10 report and specifically the table on page 7?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: No, not that I'm aware</p> <p>13 of.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. What's the difference -- well, strike that.</p> <p>16 In your report, page 7, you list out five</p> <p>17 meta-analyses and a pooled analysis; is that right?</p> <p>18 A. Yes.</p> <p>19 Q. What is the difference between a pooled</p> <p>20 analysis and a meta-analysis?</p> <p>21 A. You know, I really can't give you a good</p> <p>22 definition of that.</p> <p>23 Q. How did you select these five studies to set</p> <p>24 forth in your report?</p> <p>25 A. I think these were all of the meta-analyses</p>	<p style="text-align: right;">Page 180</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: To some degree.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. A proper meta-analysis or pooled analysis</p> <p>5 must analyze the sources of heterogeneity across the</p> <p>6 studies; right?</p> <p>7 A. Yes.</p> <p>8 Q. And a proper meta-analysis or pooled analysis</p> <p>9 must examine the methodology that lead to the</p> <p>10 underlying studies; right?</p> <p>11 A. Yes. I think that's where the weighting done</p> <p>12 in the meta-analysis helps.</p> <p>13 Q. Did you examine the methodology in the</p> <p>14 studies underlying these meta-analyses and pooled</p> <p>15 analyses?</p> <p>16 A. Not in detail.</p> <p>17 Q. Do you agree that consistency exists when</p> <p>18 different studies look at different populations --</p> <p>19 strike that. Let me ask that question again.</p> <p>20 Do you agree that consistency exists when</p> <p>21 different studies looking at different populations</p> <p>22 reach consistent results?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: Yes. It seems to be what</p> <p>25 I would consider consistency.</p>
<p style="text-align: right;">Page 179</p> <p>1 that I was aware of.</p> <p>2 Q. Did you only review the studies that showed a</p> <p>3 statistically significant relationship between</p> <p>4 perineal talc use and ovarian cancer?</p> <p>5 A. I believe I included all the meta-analyses</p> <p>6 that I could identify.</p> <p>7 Q. Meta-analyses and pooled analyses combine the</p> <p>8 work of other published studies into one study; is</p> <p>9 that right?</p> <p>10 A. Yes.</p> <p>11 Q. If there are biases and confounding in the</p> <p>12 underlying studies, the meta-analysis or pooled</p> <p>13 analysis will reflect the biases and confounding;</p> <p>14 correct?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: It obviously varies from</p> <p>17 one study to another. I would be very surprised if</p> <p>18 all studies included in the meta-analysis had the same</p> <p>19 errors, if you will.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Well, can you answer that question?</p> <p>22 If there are biases and confounding in the</p> <p>23 underlying studies, the meta-analysis or pooled</p> <p>24 analysis will reflect the biases and confounding;</p> <p>25 correct?</p>	<p style="text-align: right;">Page 181</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. A meta-analysis does not demonstrate whether</p> <p>3 similar results were replicated across different</p> <p>4 populations; correct?</p> <p>5 A. Yes. It combines all the papers that were</p> <p>6 considered in the meta-analysis.</p> <p>7 Q. It combines study results into one risk</p> <p>8 calculation; is that right?</p> <p>9 A. After weighting the different studies in</p> <p>10 terms of the number of patients and the statistics.</p> <p>11 Q. Therefore, meta-analyses themselves cannot</p> <p>12 demonstrate consistency of results across different</p> <p>13 populations; correct?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: They could demonstrate</p> <p>16 consistency.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. How could they demonstrate consistency of</p> <p>19 results across different populations if what they're</p> <p>20 doing is combining the study results into one risk</p> <p>21 calculation?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: I don't understand what</p> <p>24 you mean by them not being able to demonstrate</p> <p>25 consistency across different populations.</p>

<p style="text-align: right;">Page 182</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. In your report, you claim that Penninkilampi</p> <p>3 and every meta-analysis before 2018 report a similar</p> <p>4 increase in the risk of epithelial ovarian cancer with</p> <p>5 the use of talcum powder; is that right?</p> <p>6 A. Yes.</p> <p>7 Q. But each of these meta-analyses that you set</p> <p>8 forth on page 7 of your report use many of the same</p> <p>9 studies as the other meta-analyses; is that right?</p> <p>10 A. Yes. Over time, new case-control studies</p> <p>11 were added to the meta-analyses.</p> <p>12 Q. Well, for instance, Langseth 2008 and Graham</p> <p>13 1999 each include all nine of the studies that were</p> <p>14 included in Gross and Berg 1995; is that right?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: I believe --</p> <p>17 MS. O'DELL: Did you say Graham '99?</p> <p>18 MR. ZELLERS: No, I said Cramer '99.</p> <p>19 MS. O'DELL: Okay. I thought you said</p> <p>20 Graham.</p> <p>21 THE WITNESS: It says Graham on the</p> <p>22 transcription.</p> <p>23 MS. O'DELL: So Cramer is what you're</p> <p>24 referring to, '99?</p> <p>25 MR. ZELLERS: Yes. I'll ask that</p>	<p style="text-align: right;">Page 184</p> <p>1 can let the record -- correct this later if need be.</p> <p>2 Doctor --</p> <p>3 MS. O'DELL: I'll have it in front of</p> <p>4 you in one moment, Doctor.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Okay. Dr. Clarke-Pearson, you now have</p> <p>7 Langseth 2008 and Cramer 1999 in front of you; is that</p> <p>8 right?</p> <p>9 A. Yes.</p> <p>10 Q. Langseth 2008 included all but one of the 14</p> <p>11 studies that were included in Cramer 1999; is that</p> <p>12 right?</p> <p>13 A. This is the Cramer case-control study.</p> <p>14 Q. Let me ask you the question this way, Doctor:</p> <p>15 Do you have any reason to doubt as you sit here or</p> <p>16 dispute as you sit here that Langseth 2008 did not</p> <p>17 include all but one of the 14 studies that were</p> <p>18 included in Cramer 1999?</p> <p>19 A. I would accept that as the truth.</p> <p>20 Q. Thank you. As you sit here, do you have any</p> <p>21 reason to doubt or dispute that Langseth 2008 included</p> <p>22 all but one of the 15 studies that were included in</p> <p>23 Huncharek 2003?</p> <p>24 I understand you don't have the studies in</p> <p>25 front of you to be able to make that --</p>
<p style="text-align: right;">Page 183</p> <p>1 question again if it was unclear.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. For instance, Langseth 2008 and Cramer 1999</p> <p>4 each included all nine of the studies that were</p> <p>5 included in Gross and Berg 1995; correct?</p> <p>6 A. I believe so.</p> <p>7 Q. Langseth 2008 included all but one of the 14</p> <p>8 studies that were included in Cramer 1999; correct?</p> <p>9 MS. O'DELL: And if you need to</p> <p>10 compare --</p> <p>11 THE WITNESS: I need to see the paper.</p> <p>12 I have Langseth; if I can see Cramer's.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Well, did you consider this in terms of</p> <p>15 analyzing the information and data?</p> <p>16 A. No.</p> <p>17 Q. Take a look, then, if you need to, at the</p> <p>18 Cramer 1999 paper.</p> <p>19 MS. O'DELL: Just a moment. I'm sorry.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. We're still just looking at your folders from</p> <p>22 earlier today that you have in front of you; right,</p> <p>23 Doctor?</p> <p>24 A. Yes.</p> <p>25 Q. Let me phrase it a different way, and then we</p>	<p style="text-align: right;">Page 185</p> <p>1 MS. O'DELL: Let me just -- I would</p> <p>2 just object to the line of questions. If you're going</p> <p>3 to ask the specific studies that are listed in the</p> <p>4 table and ask him to compare --</p> <p>5 MR. ZELLERS: No. What I'm asking him,</p> <p>6 Counsel --</p> <p>7 MS. O'DELL: Let me finish.</p> <p>8 It's unfair to ask him to make comparisons</p> <p>9 regarding the studies included in the meta-analyses</p> <p>10 without affording him the opportunity to look at the</p> <p>11 articles themselves.</p> <p>12 MR. ZELLERS: And, Counsel, as you</p> <p>13 know, we've got limited time, and I don't want to sit</p> <p>14 here --</p> <p>15 MS. O'DELL: It's still an unfair</p> <p>16 question.</p> <p>17 MR. ZELLERS: It is not an unfair</p> <p>18 question to ask this witness if he has any reason as</p> <p>19 he sits here to dispute or to doubt that Langseth 2008</p> <p>20 included all but one of the 15 studies that were</p> <p>21 included in Huncharek 2003.</p> <p>22 MS. O'DELL: Well, that's not a fair</p> <p>23 question when you're not providing him an opportunity</p> <p>24 to compare the two.</p> <p>25 And so if Dr. Clarke-Pearson wants to see a</p>

<p style="text-align: right;">Page 186</p> <p>1 copy of the study, then we'll put it in front of him, 2 because that's not a fair analysis, particularly when 3 you're talking about multiple -- more than 10 to 15 4 meta-analyses -- excuse me -- cohorts over time. 5 MR. ZELLERS: Counsel, I've asked you a 6 number of times not to make speaking objections. All 7 that I am doing is asking the doctor questions about 8 the studies included in the six meta-analyses and 9 pooled analysis that he sets out in a chart. 10 If he doesn't have the answer, my question 11 is framed as to whether or not he has any reason to 12 dispute or doubt the overlap of studies. 13 MS. O'DELL: Well, I would just say, 14 Dr. Clarke-Pearson, to the degree you remember, you 15 can answer his questions. But, to the degree he asks 16 you to assume something, don't assume that what 17 counsel is stating is correct because it may or may 18 not be true. 19 MR. ZELLERS: And I'm not asking the 20 doctor to assume. 21 MS. O'DELL: Yes, you did. 22 MR. ZELLERS: I did not ask him to 23 assume, Counsel. You can go back and read the 24 question, but it did not ask him to assume that. It 25 asked him if he was aware of there being any</p>	<p style="text-align: right;">Page 188</p> <p>1 Q. Okay. 2 A. I mean, if this is a quiz about memorizing 3 details of clinical studies, then... 4 Q. I don't want it to be a quiz. Let me ask you 5 a new question. 6 If the meta-analyses are all combining the 7 same set of studies, you would expect them to yield 8 similar results; correct? 9 A. If they only contain the same set of studies 10 but each one had slightly different, and the more 11 recent ones added studies to them. 12 Q. Have you attempted to quantify how much 13 talcum powder reaches a woman's ovaries when they use 14 a talcum powder product? 15 A. Have I done some experiment? 16 Q. Yes. 17 A. I know that talcum powder gets there; I have 18 not done any experimentation to that question. 19 Q. Do you have any -- were you finished? 20 A. Yes. 21 MS. BOCKUS: Object as nonresponsive. 22 BY MR. ZELLERS: 23 Q. Do you have any idea how much talcum powder 24 reaches a woman's ovaries each time she uses it? 25 A. I'm sure it varies depending upon the</p>
<p style="text-align: right;">Page 187</p> <p>1 difference in terms of Langseth including all but one 2 of the 15 studies that were included in Huncharek 3 2003. 4 MS. O'DELL: I stand corrected. You 5 said "Do you have any reason to doubt or dispute," 6 which I took to be -- 7 MR. ZELLERS: "Do you have any reason 8 to" -- 9 MS. O'DELL: -- which I took to be 10 assume. 11 And I'm asking you to assume that counsel is 12 not being accurate. 13 BY MR. ZELLERS: 14 Q. Can you answer my question, Doctor? 15 And here's my question: Do you have any 16 reason to believe that Langseth 2008, which you cite, 17 included all but one of the 15 studies that were 18 included in Huncharek 2003, which you cite? 19 A. Without reading and going through the table 20 of the 'teen or so studies, I would have to assume 21 that you're representing properly what -- 22 Q. That is not a comparison that you have made 23 personally; correct? 24 A. I have not. And if I did, I can't remember 25 now.</p>	<p style="text-align: right;">Page 189</p> <p>1 menstrual cycle, the age of the patient, the patient's 2 anatomy. 3 Q. It's fair to say you don't know and have not 4 done any type of calculation or experiment to 5 determine the answer to that question; correct? 6 MS. O'DELL: Object to the form. 7 THE WITNESS: That's correct. 8 BY MR. ZELLERS: 9 Q. Isn't the biological mechanism dependent on 10 how much talc a woman's ovaries are exposed to? 11 A. Which biological mechanism are you talking 12 about? 13 Q. Dose response. 14 MS. O'DELL: Object to the form. 15 THE WITNESS: So, then, rephrasing your 16 question, isn't the dose response dependent upon how 17 much talc a woman's ovaries are exposed to? 18 BY MR. ZELLERS: 19 Q. I'll accept that. 20 A. That sounds like the answer -- you answered 21 your own question. 22 Q. Well, I need you to answer the question. The 23 answer is a yes to that question; correct? 24 A. The dose is dependent upon how much talc gets 25 to the ovaries, yes.</p>

<p style="text-align: right;">Page 190</p> <p>1 Q. And you've not done a calculation or 2 experiment to determine what that amount is; correct? 3 A. That's correct. 4 Q. All right. 5 Let me mark Cramer 2016. We discussed it 6 earlier, but we'll mark it for the record. This is a 7 study that you cite in your materials. We'll mark it 8 as Exhibit 26. 9 (Exhibit No. 26 was marked for identification.) 10 BY MR. ZELLERS: 11 Q. You recognize this paper; correct? 12 A. I've reviewed it. 13 Q. This is a retrospective case-control study 14 published in 2016; correct? 15 A. Yes. 16 Q. You discuss this study in your report on 17 page 9; is that right? 18 A. Let me turn to page 9. 19 Q. Sure. I'm looking under "Biologic 20 Gradient/Dose-response" right in the middle. 21 You claim that (as read): 22 "A number of studies have 23 demonstrated an association 24 between 'dose' and the occurrence 25 of EOC [or epithelial ovarian</p>	<p style="text-align: right;">Page 192</p> <p>1 that there is a dose response; is that right? 2 A. Yes. 3 Q. And, in fact, at least looking at Table 1 of 4 the Cramer study, this does not show a dose response; 5 correct? 6 MS. O'DELL: Object to the form. 7 THE WITNESS: So, going down that 8 table, there is more of a dose response as we get 9 under the second half of that table, toward "general 10 talc applications." 11 BY MR. ZELLERS: 12 Q. There is not a consistent dose response; 13 correct? 14 A. Not a consistent. 15 Q. Yes. I mean, you get a statistically 16 significant finding and then a period of time where 17 there's not a statistically significant finding and 18 then another period of time where there is a 19 statistically significant finding; is that right? 20 MS. O'DELL: Object to the form. 21 THE WITNESS: As I read through the 22 second half of this table, there's a consistent 23 statistically significant finding beginning after less 24 than 360 applications, equivalent to one year of daily 25 use.</p>
<p style="text-align: right;">Page 191</p> <p>1 cancer] (response)." 2 Is that right? 3 A. That's correct. 4 Q. Let's look at what the Cramer study shows. 5 Turn to page 337 of the Cramer paper, if you 6 will, Exhibit 26 to the deposition. 7 Do you see Table 1? 8 A. Yes, sir. 9 Q. Table 1 shows the risk of ovarian cancer for 10 women who use talc daily for different periods of 11 time -- 1 year, 1 to 5 years, 5 to 20 years, and more 12 than 20 years. Is that right? 13 A. Yes. 14 Q. There was only statistical significance for 15 one to five years of use and for more than 20 years of 16 use; is that right? 17 A. According to the odds ratio and the 18 confidence intervals, yes. 19 Q. If there is a dose response, shouldn't there 20 continue to be statistical significance with increased 21 exposure? 22 A. In general, you would think that. But, on 23 the other hand, maybe we don't have to have a dose 24 response to cause cancer. 25 Q. Well, certainly you've opined in your report</p>	<p style="text-align: right;">Page 193</p> <p>1 BY MR. ZELLERS: 2 Q. Well, when you review, you consider all of 3 the data; correct? 4 A. Yes. 5 Q. The top of the Table 1 is not consistent with 6 the bottom of Table 1, at least in terms of 7 statistically significant findings; is that right? 8 A. The two -- the two vary, depending upon how 9 you quantitate dose. 10 Q. Another criteria or factor for Bradford Hill 11 is biological plausibility; is that right? 12 A. Yes. 13 Q. The biological mechanisms of cancer are not 14 your area of expertise; is that correct? 15 MS. O'DELL: Object to the form. 16 THE WITNESS: I think, as a gynecologic 17 oncologist, I have a good understanding of the 18 biological mechanisms of cancer. For example, human 19 papillomavirus causes cervical cancer, vaginal cancer, 20 vulvar cancer, anal cancer, oropharyngeal cancer. 21 BY MR. ZELLERS: 22 Q. Do you defer to other experts on the topic of 23 biologic plausibility? 24 A. I think there are some that know more than 25 I know about it. But I know that, for example, in</p>

<p style="text-align: right;">Page 194</p> <p>1 this disease of ovarian cancer caused by talcum 2 powder, inflammation is the most likely cause. 3 Q. And do you consider yourself to be an expert 4 on the topic of biologic plausibility as it relates to 5 talcum powder and ovarian cancer? 6 MS. O'DELL: Objection to form. Asked 7 and answered. 8 THE WITNESS: I think I have a very 9 good understanding of that, and I'm not sure how you 10 define an expert. 11 BY MR. ZELLERS: 12 Q. Is all epithelial ovarian cancer caused by 13 the same mechanism? 14 A. I don't think so. 15 Q. You stated before that there are different 16 mechanisms; is that right? 17 A. I said -- yes. 18 Q. What is the biologic mechanism for serous 19 ovarian cancer? 20 A. There could be several biological mechanisms 21 for any of the ovarian cancers. 22 Q. Well, what biologic mechanisms are there, 23 based upon your experience, for serous cancer -- 24 ovarian cancer? 25 A. One of the biologic mechanisms are BRCA1 to 2</p>	<p style="text-align: right;">Page 196</p> <p>1 cancer have different biological mechanisms; correct? 2 A. Again, I'm not sure what you mean by 3 "biological mechanism." 4 Q. You're not familiar with biological 5 mechanisms that cause ovarian cancer? 6 A. The biological mechanism that I've been 7 trying to explain to you is gene mutation. 8 Q. That's the only biological mechanism that 9 causes ovarian cancer, in your experience; is that 10 right? 11 A. You're talking about what causes ovarian 12 cancer, not the mechanism that becomes ovarian cancer 13 or what ovarian cancer represents. 14 Q. I'm asking you the mechanism that causes 15 ovarian cancer. And you have told me that, with 16 talcum powder, it is gene mutation; is that right? 17 MS. O'DELL: Object to the form. 18 THE WITNESS: As it is for all cancers. 19 As it is for all ovarian cancers. 20 BY MR. ZELLERS: 21 Q. If talc is associated with all subtypes of 22 epithelial ovarian cancer or with different subtypes 23 in different studies, doesn't that suggest that the 24 association is by chance? 25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 195</p> <p>1 mutations. And, as I discussed previously, all 2 cancers are caused by mutations of genes that regulate 3 cell growth and result in invasion and metastases. 4 Q. Any others? 5 A. Anything else beside gene mutations? 6 Q. Gene mutations, yes, for serous ovarian 7 cancer. 8 A. There are always gene mutations causing the 9 cancer. And, therefore, if you're just specifically 10 talking about serous cancers, then gene mutations for 11 all serous cancers occur. They are not normal cells. 12 Q. Does talcum powder increase all subtypes of 13 ovarian cancer? 14 MS. O'DELL: Objection. Asked and 15 answered. 16 THE WITNESS: I think the epidemiologic 17 data would suggest that serous cancers are the most 18 common but endometrioid are there. 19 And the other study -- other types of 20 epithelial ovarian cancers -- clear cell and 21 mucinous -- are so infrequent -- they're rare cancers. 22 And, therefore, we don't have statistical power to 23 decide whether they're caused by talc or not. 24 BY MR. ZELLERS: 25 Q. Different subtypes of epithelial ovarian</p>	<p style="text-align: right;">Page 197</p> <p>1 THE WITNESS: So no carcinogen is going 2 to cause cancer in every circumstance in every 3 patient. Some patients may be more susceptible to a 4 carcinogen; others may be more resistant. 5 Women with BRCA1 mutations don't always 6 develop ovarian cancer, but they are at much higher 7 risk. It usually causes -- it requires a number of 8 mutations before a malignancy occurs, not just one. 9 BY MR. ZELLERS: 10 Q. You would agree that different studies have 11 found different associations between talcum powder use 12 and different types of epithelial ovarian cancer; is 13 that right? 14 A. The -- yes, and because possibly many of 15 those rare cancers, like mucinous cancers and clear 16 cell cancers, are not -- the studies aren't powered to 17 identify those. So we don't know, I guess would be my 18 answer. 19 Q. Putting aside inhalation for the moment, your 20 opinion is that talcum powder travels from the 21 perineal region to the ovaries through the woman's 22 reproductive tract; is that right? 23 A. Yes, sir. 24 Q. So the talcum powder must travel across the 25 vulva, through the labia majora, through the labia</p>

<p style="text-align: right;">Page 198</p> <p>1 minora, across the -- and clitoris, across the</p> <p>2 perineal body, up into the vagina, into the cervical</p> <p>3 canal, through the cervix and cervical mucosa, or</p> <p>4 mucus, into the endometrial cavity, through the</p> <p>5 uterus, into the fallopian tube opening, across the</p> <p>6 entire length of the fallopian tube to the fimbria,</p> <p>7 and then into the ovary; is that right?</p> <p>8 A. Yes, sir.</p> <p>9 Q. If talcum powder can make this migration, can</p> <p>10 other substances also make the same migration?</p> <p>11 A. I presume so.</p> <p>12 Q. Sand from the beach?</p> <p>13 A. I think the particle size may have some</p> <p>14 bearing on how far it can get up the reproductive</p> <p>15 tract.</p> <p>16 Q. Toilet paper particles?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: Again, depends upon the</p> <p>19 particle size.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. There is no human study that demonstrates the</p> <p>22 migration of any particulate matter from the perineum</p> <p>23 to the ovaries; correct?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: Number of studies that</p>	<p style="text-align: right;">Page 200</p> <p>1 Q. And my question to you is --</p> <p>2 MS. O'DELL: I think he was finished --</p> <p>3 he wasn't finished.</p> <p>4 THE WITNESS: I was going to read this</p> <p>5 to you from Langseth. And the sentence says</p> <p>6 (as read):</p> <p>7 "The evidence of talc migrating to</p> <p>8 the ovaries lends credibility to</p> <p>9 such a possible association."</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. Can you answer my question?</p> <p>12 A. I was reporting to you a study.</p> <p>13 Q. I need you to answer my question if you can.</p> <p>14 A. Okay.</p> <p>15 Q. I'll ask it again.</p> <p>16 Is there any human study that demonstrates</p> <p>17 the migration of any particulate -- and let me</p> <p>18 withdraw that, because I think I moved on to the next</p> <p>19 question.</p> <p>20 None of the articles that you cite actually</p> <p>21 looked at whether talc can migrate from the perineal</p> <p>22 application through the fallopian tubes to the</p> <p>23 ovaries; correct?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: That's correct.</p>
<p style="text-align: right;">Page 199</p> <p>1 show that once it's in the vagina, it can migrate --</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. There is --</p> <p>4 A. -- to the ovary.</p> <p>5 Q. But the answer to my question is correct.</p> <p>6 There are no human studies that demonstrate the</p> <p>7 migration of any particulate matter from the perineum</p> <p>8 to the ovaries; correct?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: Nobody has studied it</p> <p>11 that I'm aware of.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. None of the articles you cite in your report</p> <p>14 actually looked at whether talc can migrate from</p> <p>15 perineal application through the fallopian tubes to</p> <p>16 the ovaries; correct?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: Well, if you go to</p> <p>19 Langseth, for example, on the second page underneath</p> <p>20 the forest plot at the end of the second full</p> <p>21 paragraph -- I'm sorry. I've got your exhibit.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. Well, you have the exhibit. I should have a</p> <p>24 copy.</p> <p>25 A. Okay.</p>	<p style="text-align: right;">Page 201</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. All right. You also cannot cite any article</p> <p>3 that shows granulomas, fibrosis, or adhesions anywhere</p> <p>4 up the reproductive tract of a woman as a result of</p> <p>5 her external genital talc application, can you?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: No.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Let's talk about the studies that you cite in</p> <p>10 your report in support of your theory of migration.</p> <p>11 MS. O'DELL: Object to -- excuse me.</p> <p>12 Sorry.</p> <p>13 MR. ZELLERS: It's okay.</p> <p>14 MS. O'DELL: I apologize.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. In support of your theory of migration, you</p> <p>17 discuss sperm. I'm looking at page 7, last paragraph</p> <p>18 that carries over onto page 8. Is that right?</p> <p>19 A. I have it.</p> <p>20 MS. O'DELL: Object to form.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Sperm have tails and motility; is that right?</p> <p>23 A. Yes, and that's acknowledged in my report.</p> <p>24 Q. Sperm affirmatively move themselves up the</p> <p>25 reproductive tract; is that right?</p>

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<p>1 A. They can.</p> <p>2 Q. You cite Egli, 1961, the carbon particle</p> <p>3 study. Are you familiar with that, or do you need me</p> <p>4 to hand you another copy?</p> <p>5 A. I've reviewed it before. It's been a little</p> <p>6 while.</p> <p>7 Q. Well, let me ask you a couple of questions.</p> <p>8 A. Sure.</p> <p>9 Q. And if you need the study, then I'll be happy</p> <p>10 to have you take a look at it.</p> <p>11 Egli did not involve talcum powder; correct?</p> <p>12 A. No. These are carbon particles.</p> <p>13 Q. Egli used carbon particles that were</p> <p>14 suspended in a solution that had the consistency of</p> <p>15 seminal fluid; is that right?</p> <p>16 MS. O'DELL: If you need to take a</p> <p>17 moment to review, Doctor, feel free to do that.</p> <p>18 THE WITNESS: They were suspended in</p> <p>19 dextran suspension.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Is that seminal fluid, fluid that sperm are</p> <p>22 suspended in?</p> <p>23 A. No.</p> <p>24 Q. What solution were they suspended in?</p> <p>25 A. Dextran.</p>	<p>1 heads tilted downward is a very -- is very different</p> <p>2 from the way in which women generally apply talcum</p> <p>3 powder to their perineal region?</p> <p>4 A. Honestly, I don't know how they apply talcum</p> <p>5 powder to their perineal region. I would imagine</p> <p>6 they're not with their head down, but they may be</p> <p>7 sitting, they may be standing, they may be lying.</p> <p>8 Q. Based upon your experience, it's different;</p> <p>9 correct?</p> <p>10 A. I don't have any experience with talcum</p> <p>11 powder application.</p> <p>12 Q. Right. So you don't know whether or not most</p> <p>13 women apply talcum powder to their perineal region</p> <p>14 with their head toward the ground and their legs up in</p> <p>15 the air?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: I think it's unlikely</p> <p>18 that they have their heads to the ground and legs in</p> <p>19 the air, but they have probably multiple positions</p> <p>20 they could apply it in.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Even with these artificial conditions, the</p> <p>23 researchers only found carbon particles in the</p> <p>24 fallopian tubes of two of the three women; is that</p> <p>25 right?</p>
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<p>1 Q. What support do you have for the proposition</p> <p>2 that talcum powder behaves similarly to carbon</p> <p>3 particles suspended in a dextran fluid-like substance?</p> <p>4 A. I think it's very similar to talcum powder</p> <p>5 particles progressing up. Dextran is a thick,</p> <p>6 glucose-rich medium that is much like vaginal fluid,</p> <p>7 if you will.</p> <p>8 Q. It's a fluid; right?</p> <p>9 A. Yes.</p> <p>10 Q. Talcum powder is a particle; correct?</p> <p>11 A. Once talcum powder gets into the vagina, it</p> <p>12 becomes part of the vaginal fluid.</p> <p>13 Q. The Egli study involved three women; is that</p> <p>14 right?</p> <p>15 A. Yes.</p> <p>16 Q. Tiny sample size; correct?</p> <p>17 A. Yes.</p> <p>18 Q. They used intramuscular oxytocin to aid the</p> <p>19 transport of the particles; is that right?</p> <p>20 A. Yes. It stimulated the uterus to contract.</p> <p>21 Q. And for the administration of the carbon</p> <p>22 particles, the women were laying on their backs with</p> <p>23 their heads tilted at a downward angle; is that right?</p> <p>24 A. That's what it says.</p> <p>25 Q. Do you agree that laying down with their</p>	<p>1 A. I think that's what the results said.</p> <p>2 Q. Are you familiar with the Venter 1979 study</p> <p>3 that you cite?</p> <p>4 A. I'll have to pull it back out to refresh my</p> <p>5 memory. It's been a few months since I looked at</p> <p>6 that.</p> <p>7 Q. Well, can I ask you a few questions about it?</p> <p>8 A. If I can answer them, I will. Sure.</p> <p>9 Q. Is this the radioactive marker study?</p> <p>10 A. Yes.</p> <p>11 Q. That study did not involve talcum powder; it</p> <p>12 involved a particle with a radioactive tracer. Is</p> <p>13 that right?</p> <p>14 A. Yes. Technetium albumin in microspheres.</p> <p>15 Q. What support do you have for the proposition</p> <p>16 that talcum powder behaves similarly to this kind of</p> <p>17 particle?</p> <p>18 A. I think that talcum powder is similar to</p> <p>19 these particles. It's small and can migrate.</p> <p>20 Q. In the study it involved a small sample size;</p> <p>21 right? Only 24 women?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: Yes.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. The women laid on their backs with their</p>

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1 buttocks elevated; is that right?

2 A. When it was applied, and then the patients

3 didn't undergo surgery until the next day. So the

4 patients, after being in the position where the

5 talc -- where the radioactive tracer was applied, were

6 then up and about until they came in for surgery the

7 next day. So they were in different positions.

8 Q. Is that really what you think, based upon

9 your review of the study?

10 A. You don't think that the patient was laying

11 in bed for 24 hours until she had surgery?

12 Q. Doctor, your recollection of this study is

13 that the radioactive tracer marker was used and then

14 the women were up and around?

15 MS. O'DELL: Object to the form.

16 BY MR. ZELLERS:

17 Q. In fact, after the radioactive marker was

18 administered, the women remained laying in the

19 position with their -- on their backs with their

20 buttocks elevated for two hours, with their legs

21 pressed together; is that right?

22 A. I would have to find it to refresh my memory.

23 Q. If that's true, that would be different than

24 your understanding of how women use talcum powder in

25 the genital area; correct?

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1 MS. O'DELL: Objection. Misstates the

2 doctor's testimony.

3 If you need to review --

4 THE WITNESS: Again, I don't think that

5 we know -- I know how women apply talcum powder. But

6 these women didn't lay supine for 24 hours until they

7 had their surgery, when they found the radioactive

8 microspheres in the ovary.

9 BY MR. ZELLERS:

10 Q. Do you know whether or not they laid supine

11 for two hours after the radioactive marker was

12 administered with their legs pressed together?

13 A. Yes.

14 Q. Yes, you agree with that; correct?

15 A. Yes.

16 Q. And even under these artificial conditions,

17 the researchers only found radioactive activity in the

18 fallopian tubes or ovaries of 9 of the 21 women; is

19 that right?

20 MS. O'DELL: Object to the form.

21 THE WITNESS: That's what they reported

22 in 24 hours.

23 BY MR. ZELLERS:

24 Q. You cite Sjosten, 2004, the glove study; is

25 that right?

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1 A. I did.

2 Q. That study did not involve talcum powder; it

3 involved starch. Is that right?

4 A. Yes.

5 Q. Sjosten involved the researchers examining

6 the women's cervix with their fingers; is that right?

7 Are you able to answer that question?

8 A. I need to read along with you.

9 So they examined -- they did a pelvic exam,

10 a bimanual exam on the patients.

11 Q. Examining the women's cervix with their

12 fingers; is that correct?

13 A. And examining the vagina.

14 Q. What is your basis for saying that pressing

15 gloved fingers against the cervix is comparable to an

16 external dusting of talcum powder?

17 MS. O'DELL: Object to form.

18 THE WITNESS: I think it deposits the

19 substance, the powder, against the cervix.

20 BY MR. ZELLERS:

21 Q. And the study found particles in the

22 reproductive tract of women who were examined with

23 powder-free gloves; is that right?

24 A. I believe so.

25 Q. You cite the Heller study of women's ovaries

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1 after surgical oophorectomy; is that right?

2 A. Yes.

3 Q. Didn't Heller find talc in tissues of all 24

4 patients, including the 12 who did not use perineal

5 talc?

6 A. Give me a moment.

7 Q. Let me try to ask it this way so that we can

8 move on.

9 Do you have any reason to dispute that

10 Heller found talc in tissues of all 24 patients,

11 including the 12 who did not use perineal talc?

12 MS. O'DELL: Object to the form.

13 THE WITNESS: Yes, as long as there's

14 not an issue with recall bias.

15 BY MR. ZELLERS:

16 Q. If talcum powder migrates from the perineal

17 region to the ovaries, shouldn't exposure to talc be

18 far greater in concentration in the rectal, vulvar,

19 vaginal, cervical, and uterine tissues which are

20 closer to the area of initial exposure?

21 MS. O'DELL: Object to the form.

22 THE WITNESS: I'm not sure what the

23 basis of that observation is. The urethra and anus

24 have sphincters. The urethra and anus also have an

25 exit mechanism by urination or defecation.

<p style="text-align: right;">Page 210</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. So you -- I just want to make sure I'm clear.</p> <p>3 You disagree that -- if talcum powder migrates from</p> <p>4 the perineal region to the ovaries, you disagree that</p> <p>5 exposure to talc would be greater in concentration in</p> <p>6 the rectal, vulvar, vaginal, cervical, and uterine</p> <p>7 tissues; correct?</p> <p>8 MS. O'DELL: Objection. Asked and</p> <p>9 answered.</p> <p>10 THE WITNESS: I'm not understanding</p> <p>11 your question. Would be greater where?</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Would be greater in the rectal, vulvar,</p> <p>14 vaginal, cervical, and uterine tissues than in the</p> <p>15 ovaries.</p> <p>16 MS. O'DELL: Objection. Asked and</p> <p>17 answered.</p> <p>18 THE WITNESS: I don't have any evidence</p> <p>19 about the rectum or the urethra. And it would be --</p> <p>20 yes, more likely than not, there would be more on the</p> <p>21 vulva than on the ovaries. All of it that goes on the</p> <p>22 vulva does not land on the ovaries.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Talc particles should be causing inflammation</p> <p>25 in all those organs and areas if your theory is</p>	<p style="text-align: right;">Page 212</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: Because the ovary has a</p> <p>3 different epithelium, a different surface. The</p> <p>4 vagina -- I'm sorry -- the vulva, vagina, and</p> <p>5 exocervix are all squamous epithelium. They are much</p> <p>6 more susceptible to HPV. So I can turn around the</p> <p>7 explanation and say HPV doesn't infect the</p> <p>8 endometrium -- the uterus, fallopian tubes, or</p> <p>9 ovaries. So some tissues are more susceptible to a</p> <p>10 carcinogen than others.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. What study are you referring to for that</p> <p>13 proposition?</p> <p>14 A. About HPV?</p> <p>15 Q. No. About the tissue being the same --</p> <p>16 strike that.</p> <p>17 Tissue being different and not susceptible</p> <p>18 to inflammation from talc in the human vulvar,</p> <p>19 vaginal, cervical, and uterine tissues.</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: They are all different</p> <p>22 tissues, and we have not seen any inflammation or</p> <p>23 cancer associated with talcum powder in those organs.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. Is there a study that you're referring to</p>
<p style="text-align: right;">Page 211</p> <p>1 correct; is that right?</p> <p>2 A. No.</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. Why would you not expect inflammation in the</p> <p>6 rectal, vulvar, vaginal, cervical, and uterine</p> <p>7 tissues?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: So there's no -- no</p> <p>10 evidence that this talc gets into the rectum that I'm</p> <p>11 aware of, unless you have some evidence that I'm not</p> <p>12 seeing.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Why do talc particles not cause inflammation</p> <p>15 in the other organs and areas?</p> <p>16 A. I think the other organs -- the vagina,</p> <p>17 cervix, uterus, and fallopian tubes -- are different</p> <p>18 tissues; and different tissues have different</p> <p>19 susceptibility, if you will, to the impact of talcum</p> <p>20 powder and its contents.</p> <p>21 Q. What is it about the tissues of the vulvar,</p> <p>22 vaginal, cervical, and uterine areas that would result</p> <p>23 in talc not causing inflammation to those tissues but</p> <p>24 causing, at least under your theory, inflammation to</p> <p>25 the ovary?</p>	<p style="text-align: right;">Page 213</p> <p>1 that finds that there is not inflammation from talc to</p> <p>2 those tissues?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I don't have a study,</p> <p>5 but, obviously, it's not associated with cancers of</p> <p>6 those tissues.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. There are no studies that show inflammation</p> <p>9 as a result of genital talc use result in cancer in</p> <p>10 those areas; is that right?</p> <p>11 MS. O'DELL: Objection to form.</p> <p>12 THE WITNESS: In what areas now are you</p> <p>13 talking about?</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Let me make it even simpler.</p> <p>16 There's no studies that show inflammation as</p> <p>17 a result of genital talc use in the vulvar, vaginal,</p> <p>18 cervical, and uterine areas; is that right?</p> <p>19 A. That's correct.</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. There are no studies that show a link between</p> <p>23 external genital talc use and rectal, vulvar, vaginal,</p> <p>24 cervical, or uterine cancer; is that right?</p> <p>25 A. That's correct.</p>

<p style="text-align: right;">Page 214</p> <p>1 Q. In Exhibit B of your report, you include a</p> <p>2 study published by Huncharek in 2007. That's page 11.</p> <p>3 Do you recall that study?</p> <p>4 A. No, but I'd like to refresh my memory.</p> <p>5 MS. O'DELL: Which Huncharek?</p> <p>6 MR. ZELLERS: 2007.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. Do you have that easily available?</p> <p>9 This is a study that you cite in your</p> <p>10 materials reviewed; is that right?</p> <p>11 A. Yes.</p> <p>12 Q. It's a meta-analysis of studies and the</p> <p>13 relationship between ovarian cancer and using</p> <p>14 diaphragms that are dusted with talcum powder; is that</p> <p>15 right?</p> <p>16 A. Yes.</p> <p>17 Q. A diaphragm is inserted directly onto a</p> <p>18 woman's cervix; is that right?</p> <p>19 A. Yes.</p> <p>20 Q. You did not include Huncharek 2007 in your</p> <p>21 list of meta-analyses regarding talc and ovarian</p> <p>22 cancer on page 7 of your report, did you?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: No, because it wasn't</p> <p>25 dealing with applying talcum powder to the vulva,</p>	<p style="text-align: right;">Page 216</p> <p>1 perineal region and travels to the cervix compared to</p> <p>2 when it is applied directly to the cervix?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I'm not aware of any</p> <p>5 study, no.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. When applied to the perineal region, the</p> <p>8 talcum powder would also be in close contact with a</p> <p>9 woman's urethra; correct?</p> <p>10 A. Yes.</p> <p>11 Q. Substances are capable of traveling up the</p> <p>12 urethra; right?</p> <p>13 A. Not that I know of, except for bacteria.</p> <p>14 Q. Women get urinary tract infections when</p> <p>15 bacteria travels up the urethra; right?</p> <p>16 A. I recognize that as a modal -- motile, like</p> <p>17 sperm and bacteria, when I discuss lower genital tract</p> <p>18 migration from the vagina up into the tubes and</p> <p>19 ovaries with sperm and sexually transmitted infection.</p> <p>20 So, yes, women get urinary tract infections.</p> <p>21 Q. Studies do not show an increase in bladder</p> <p>22 cancer with talcum powder use; is that right?</p> <p>23 A. That's right. The bladder is a different</p> <p>24 epithelium than the ovary.</p> <p>25 Q. And studies do not show an increase in rectal</p>
<p style="text-align: right;">Page 215</p> <p>1 perineum.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. Well, your theory, putting aside inhalation,</p> <p>4 is that the talcum powder travels from the perineal</p> <p>5 region through the vagina through the cervix through</p> <p>6 the uterus and then into the fallopian tubes; is that</p> <p>7 right?</p> <p>8 A. Yes.</p> <p>9 Q. How, then, do you validate excluding data</p> <p>10 about the relationship between ovarian cancer and</p> <p>11 talcum powder that is applied directly to the cervix?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: Because it's not the</p> <p>14 volume of talcum powder that is used on the vulva.</p> <p>15 And, over a period of time, application of diaphragms</p> <p>16 is most likely much less likely than somebody using</p> <p>17 talcum powder on the vulva on a daily basis.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. On what study are you relying for that</p> <p>20 statement?</p> <p>21 A. My clinical experience of understanding the</p> <p>22 sexual lives of women. They don't use diaphragms</p> <p>23 every day, in most cases.</p> <p>24 Q. Are you aware of any study that talcum powder</p> <p>25 affects the body differently when it is applied to the</p>	<p style="text-align: right;">Page 217</p> <p>1 cancer with talcum powder use; is that right?</p> <p>2 A. That's correct.</p> <p>3 MS. O'DELL: Objection. Asked and</p> <p>4 answered.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. Are you opining on inhalation exposure as a</p> <p>7 plausible mechanism for talcum powder to reach the</p> <p>8 ovaries, or do you defer to other experts on that?</p> <p>9 A. I think there's literature that suggests that</p> <p>10 it's a lower possibility, but inhalation of asbestos</p> <p>11 can increase the risk of ovarian cancer.</p> <p>12 Q. Well, you rely in part on Steiling 2018; is</p> <p>13 that right? This is at page 8 of your report.</p> <p>14 A. IARC and the Steiling.</p> <p>15 Q. Right. Steiling 2018 deals generally with</p> <p>16 cosmetic powders, not talcum powder; correct?</p> <p>17 A. I need to look at the paper again.</p> <p>18 Q. Well, either your counsel can hand it to you</p> <p>19 or I can hand it to you.</p> <p>20 MR. ZELLERS: Did you find it, Counsel?</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Do you have the Steiling paper in front of</p> <p>23 you?</p> <p>24 A. Yes --</p> <p>25 MS. O'DELL: Do you have a copy for me,</p>

<p style="text-align: right;">Page 218</p> <p>1 please, if you don't mind. Thank you.</p> <p>2 Are you going to mark that, Mike, or are</p> <p>3 you --</p> <p>4 MR. ZELLERS: If you want me to mark</p> <p>5 it, I can. I think we all know what it is.</p> <p>6 MS. O'DELL: I'm just asking.</p> <p>7 MR. ZELLERS: Would you like it marked?</p> <p>8 MS. O'DELL: Only if you were going to</p> <p>9 mark it, I was just going to put a number on it.</p> <p>10 MR. ZELLERS: Well, I just have a few</p> <p>11 basic questions.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. So, Doctor, my first question is the Steiling</p> <p>14 2018 deals generally with cosmetic powders, not talcum</p> <p>15 powder specifically; is that right?</p> <p>16 A. Apparently so, yes.</p> <p>17 Q. And Steiling 2018 just discusses the fact</p> <p>18 that particles can be inhaled; is that right?</p> <p>19 A. Yes.</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. It says nothing about inhaled particles</p> <p>23 migrating to the ovaries, does it?</p> <p>24 A. No.</p> <p>25 Q. In fact, it says nothing about inhaled</p>	<p style="text-align: right;">Page 220</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. I'll withdraw the question and move on.</p> <p>4 Do you agree -- well, strike that.</p> <p>5 You assert that talcum powder, when it</p> <p>6 reaches the ovaries, it elicits an inflammatory</p> <p>7 response that is linked to ovarian cancer; is that</p> <p>8 right?</p> <p>9 A. Yes. I think that's the mechanism by which</p> <p>10 gene mutation occurs.</p> <p>11 Q. Is it your opinion -- strike that.</p> <p>12 Is your opinion related to all of the</p> <p>13 different histologic types of epithelial ovarian</p> <p>14 cancer?</p> <p>15 MS. O'DELL: Objection. Asked and</p> <p>16 answered.</p> <p>17 THE WITNESS: I think an inflammatory</p> <p>18 response happens on the ovarian epithelium, and some</p> <p>19 ovarian cancers -- some epithelial ovarian cancers are</p> <p>20 more common, serous carcinoma being the most common.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Is it your opinion that inflammation is a</p> <p>23 cause of clear cell and mucinous ovarian cancer? Or</p> <p>24 do you not have an opinion?</p> <p>25 A. I don't have an opinion.</p>
<p style="text-align: right;">Page 219</p> <p>1 particles migrating anywhere, does it?</p> <p>2 MS. O'DELL: Objection.</p> <p>3 THE WITNESS: It doesn't talk about</p> <p>4 migration. You're right.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. And it also says nothing about inhaled</p> <p>7 particles causing ovarian cancer; is that right?</p> <p>8 A. In this particular study, although we know</p> <p>9 from asbestos studies that it does.</p> <p>10 Q. Well, don't studies of talcum powder use fail</p> <p>11 to show statistically significant association between</p> <p>12 nongenital use of talcum powder and ovarian cancer?</p> <p>13 A. I believe so.</p> <p>14 Q. If inhaled talc could migrate to the ovaries,</p> <p>15 wouldn't you expect to see increased ovarian cancer</p> <p>16 risk with nongenital use of talcum powder?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: In other words, inhaled.</p> <p>19 I think the inhalation is much smaller, but, to date,</p> <p>20 we haven't seen an increased risk of ovarian cancer.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. With inhaled talcum powder; correct?</p> <p>23 A. With inhaled talcum powder.</p> <p>24 Q. And that was a finding that you read about in</p> <p>25 Cramer 2016 as well as other places; correct?</p>	<p style="text-align: right;">Page 221</p> <p>1 Q. You have not done an expert review of the</p> <p>2 inflammation evidence yourself, have you?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: I'm aware of -- I've done</p> <p>5 a review and have been aware of inflammation in</p> <p>6 gynecologic cancers, especially ovarian cancer, with</p> <p>7 elevated serum biomarkers suggesting inflammation and</p> <p>8 also more biologic -- the laboratory work that</p> <p>9 Dr. Saed and others have done.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. You do know that not all inflammatory</p> <p>12 conditions lead to cancer; correct?</p> <p>13 A. Yes.</p> <p>14 Q. There's conditions that are inflammatory</p> <p>15 reactions that all of us may have -- or that folks may</p> <p>16 have that don't lead to cancer, such as rheumatoid</p> <p>17 arthritis; is that right?</p> <p>18 A. That's, best as I understand, rheumatoid</p> <p>19 arthritis.</p> <p>20 Q. Same with psoriasis; is that right?</p> <p>21 A. Yes.</p> <p>22 Q. Those are chronic inflammatory diseases;</p> <p>23 correct?</p> <p>24 A. Of the skin.</p> <p>25 Q. Rheumatoid arthritis is a chronic</p>

<p style="text-align: right;">Page 222</p> <p>1 inflammatory disease of the skin?</p> <p>2 A. It can have -- in joints. There can be a</p> <p>3 skin component to rheumatoid arthritis. I thought you</p> <p>4 were talking about psoriasis.</p> <p>5 Q. How does an acute inflammatory response lead</p> <p>6 to cancer?</p> <p>7 A. An acute inflammatory response, I don't</p> <p>8 believe, leads to cancer.</p> <p>9 Q. You have -- well, strike that.</p> <p>10 On page 9 of your report, you conclude that</p> <p>11 (as read):</p> <p>12 "Talcum powder products is a</p> <p>13 causative factor in the</p> <p>14 development of epithelial ovarian</p> <p>15 cancer."</p> <p>16 Is that right?</p> <p>17 A. Yes.</p> <p>18 Q. We can change that now based upon your</p> <p>19 testimony that talcum powder products is a causative</p> <p>20 factor in the development of serous ovarian cancer;</p> <p>21 correct?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: I think I would stay with</p> <p>24 epithelial ovarian cancer till we have more data.</p> <p>25</p>	<p style="text-align: right;">Page 224</p> <p>1 A. We don't know that information.</p> <p>2 Q. Do you consider cornstarch to be a talcum</p> <p>3 powder product that causes inflammation?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: It's not a talcum powder</p> <p>6 product.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. What about a product like Shower to Shower,</p> <p>9 which contains cornstarch and talcum powder?</p> <p>10 A. And your question is?</p> <p>11 Q. My question is, is there a certain amount of</p> <p>12 talcum powder that a product must contain to cause</p> <p>13 inflammation?</p> <p>14 A. Not that we're aware of.</p> <p>15 Q. 1 percent talcum powder, 99 percent</p> <p>16 cornstarch, that could cause inflammation resulting in</p> <p>17 epithelial ovarian cancer. Is that your testimony?</p> <p>18 A. I think that's possible.</p> <p>19 Q. What methodology have you arrived -- strike</p> <p>20 that.</p> <p>21 What methodology have you employed to arrive</p> <p>22 at the conclusion that the Shower to Shower product</p> <p>23 causes inflammation?</p> <p>24 A. It has talcum powder in it.</p> <p>25 Q. Your opinion that talcum powder products</p>
<p style="text-align: right;">Page 223</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. How do you define the term "talcum powder</p> <p>3 products"?</p> <p>4 A. Talcum powder products are Johnson's baby</p> <p>5 powder and Shower to Shower.</p> <p>6 Q. Are other consumer talcum powder products</p> <p>7 included in your conclusions?</p> <p>8 A. Yes, but Johnson & Johnson has the market</p> <p>9 share, as I understand it.</p> <p>10 Q. Do you understand that some of the talc</p> <p>11 epidemiology separates use by type of talcum powder</p> <p>12 product?</p> <p>13 MS. O'DELL: Object to the form.</p> <p>14 THE WITNESS: I'm not sure what you</p> <p>15 mean by type of talcum powder.</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Do you include talc-containing deodorizing</p> <p>18 sprays in your definition of talcum powder products?</p> <p>19 THE WITNESS: No. We've been talking</p> <p>20 today, I thought, about Johnson -- as you defined it</p> <p>21 to start the day as Johnson & Johnson baby powder and</p> <p>22 Shower to Shower.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Is there a certain amount of talcum powder</p> <p>25 that a product must contain to cause inflammation?</p>	<p style="text-align: right;">Page 225</p> <p>1 cause inflammation is not based on the determination</p> <p>2 that there is a threshold amount of talcum powder that</p> <p>3 is required to be in the product before you can</p> <p>4 conclude that the product will cause chronic</p> <p>5 inflammation; correct?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: I think there's no</p> <p>8 threshold amount that -- below which the patient</p> <p>9 that's exposed to talcum powder is safe.</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. Is there a study that you can cite me to for</p> <p>12 that proposition?</p> <p>13 A. No, except that, overall, women that have</p> <p>14 been exposed to talcum powder in the perineum have an</p> <p>15 increased risk of ovarian cancer. And we don't know</p> <p>16 the quantity in each individual patient. So some</p> <p>17 patients may have had a small amount and developed</p> <p>18 ovarian cancer, unfortunately.</p> <p>19 Q. If inflammation is the issue, why would</p> <p>20 cornstarch be a superior alternative to talc?</p> <p>21 A. Because I don't believe cornstarch causes</p> <p>22 chronic inflammation. It's absorbed by the body.</p> <p>23 Macrophages come in and clear it out. It's not a</p> <p>24 permanent mineral like talc is.</p> <p>25 Q. Are you aware that the FDA banned the use of</p>

<p style="text-align: right;">Page 226</p> <p>1 cornstarch on surgical gloves because of the risk of 2 inflammation, granulomas, fibrosis, adhesions, and 3 irritation? 4 A. Yes, because that was causing an acute 5 inflammation, not a chronic inflammation. 6 Q. Are you aware, though, that that was the 7 reason the FDA banned the use of cornstarch on 8 surgical gloves? 9 A. They were trying to stop adhesion formation 10 after surgery. 11 Q. So you are aware of that; is that right? 12 A. Yes. When I was coming up, we had to wash 13 our gloves before we operated, for that reason. 14 Q. How many patients with ovarian cancer have 15 you operated on over the course of your career? 16 A. I would say probably 30 women a year over 40 17 years. 18 Q. For those patients that had nonendometrioid 19 ovarian cancer, have you seen evidence of inflammation 20 when you operated? 21 MS. O'DELL: Object to the form. 22 THE WITNESS: When I operated, 23 75 percent of these patients have cancer all over 24 their abdominal and peritoneal cavity, and identifying 25 inflammation visually from the cancer is something a</p>	<p style="text-align: right;">Page 228</p> <p>1 A. That's about the only thing that I can 2 determine with my naked eye as to what looks like 3 inflammation. 4 Q. You see that in some patients but not all 5 patients with ovarian cancer; correct? 6 A. That's true. That's not the only thing that 7 is related to inflammation. 8 Q. For your patients with a nonendometrioid 9 ovarian cancer, has microscopic examination of their 10 tissues shown evidence of activation of an 11 inflammatory cascade? 12 MS. O'DELL: Object to the form. 13 THE WITNESS: I don't think that 14 pathologists look at that. And I'm not sure exactly 15 what you would identify histologically in an 16 inflammatory cascade. I described to you lymphocytes, 17 for example, that represent inflammation. 18 BY MR. ZELLERS: 19 Q. Has it shown evidence of granulomas? 20 A. No. 21 MS. O'DELL: Object to the form. 22 BY MR. ZELLERS: 23 Q. Has it shown evidence of foreign body or 24 giant cell reactions? 25 A. Not that I'm aware of.</p>
<p style="text-align: right;">Page 227</p> <p>1 surgeon or any doctor can't do. 2 If you look at histologic specimens of the 3 tumor -- the cancer, we see inflammation, we see 4 lymphocytes and other inflammatory cells. And, in 5 addition, you see inflammatory biomarkers like CA-125. 6 BY MR. ZELLERS: 7 Q. At least grossly, when you operate on 8 patients with nonendometrioid ovarian cancer, you do 9 not see evidence of inflammation; correct? 10 MS. O'DELL: Object to the form. 11 THE WITNESS: Well, I see -- 12 MS. O'DELL: I'm sorry. 13 THE WITNESS: -- probably more acute 14 inflammation. We do see additional increased 15 peritoneal fluid, what's called ascites, which is 16 probably an inflammatory response to the cancer. 17 BY MR. ZELLERS: 18 Q. Do you see adhesions? 19 A. Sometimes. 20 Q. So it's your testimony that, when you operate 21 on patients with nonendometrioid ovarian cancer, you 22 do see evidence of inflammation grossly; is that 23 right? 24 A. Yes, with ascites. 25 Q. What else?</p>	<p style="text-align: right;">Page 229</p> <p>1 Q. Do you believe that every time a talc 2 particle enters the human body, it produces an 3 inflammatory response? 4 A. A talc particle? Are we talking about platy 5 talc or fibrous talc or what kind of talc -- 6 Q. Talcum powder. Do you believe that every 7 time a talc particle -- talcum powder enters the human 8 body, it produces an inflammatory response? 9 A. I think it does on a microscopic basis, yes. 10 Q. You rely on Heller 1996 for the idea that 11 talc can migrate to the ovaries. We talked about the 12 Heller paper; right? 13 A. Yes. 14 Q. And, in fact, didn't Heller find that there 15 was no reaction in the ovaries to the talc particles? 16 A. I'd like to look at that paper again -- 17 Q. Sure. Take -- 18 A. -- because we were talking along the lines of 19 what ovarian cancer patients look like and now we're 20 back to -- 21 Q. I can get it for you or your counsel can show 22 you. 23 I'm looking at Heller 1996, page 1508, right 24 column, second-to-last paragraph. 25 Counsel, is it easier for me to find it?</p>

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1 MS. O'DELL: Yeah, why don't you do
2 that?

3 MR. ZELLERS: All right. We'll mark
4 the Heller paper that we discussed previously as
5 Exhibit 27.
6 (Exhibit No. 27 was marked for identification.)
7 BY MR. ZELLERS:
8 Q. Doctor, is this the paper we talked about
9 previously and that you reviewed and are relying on in
10 this case?
11 A. Yes.
12 Q. Turn, if you will, to page 1508, the second
13 page. And I'm looking on the right-hand column just
14 two sentences above "Comment" (as read):
15 "There was no evidence of response
16 to talc, such as foreign body
17 giant cell reactions or fibrosis
18 in the tissue."
19 Did I read that correctly?
20 A. Yes.
21 Q. What evidence is there that externally
22 applied talcum powder causes chronic inflammation?
23 A. Again, I think we see increased biomarkers.
24 I think Dr. Saed's research using ovarian cancer cells
25 shows the inflammatory response that results in gene

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1 mutations.
2 Q. Well, we talked a bit ago, you're unaware of
3 any reports or studies in the literature of externally
4 applied talc leading to inflammation, granulomas,
5 fibrosis, or adhesions anywhere along a woman's
6 reproductive tract; is that right?
7 MS. O'DELL: Object to the form.
8 THE WITNESS: So what you're describing
9 with adhesions is a reaction -- is an acute
10 reaction -- acute inflammatory reaction, not a chronic
11 reaction.
12 BY MR. ZELLERS:
13 Q. My question is if up to 50 percent of US
14 women have used genital talc, shouldn't this be a
15 common finding, inflammation, granulomas, fibrosis
16 along a woman's reproductive tract?
17 MS. O'DELL: Object to the form.
18 THE WITNESS: Those conditions you're
19 describing are the reaction to an acute inflammation.
20 We're talking about chronic inflammation.
21 BY MR. ZELLERS:
22 Q. So your testimony is inflammation,
23 granulomas, fibrosis, or adhesions are inconsistent
24 with and not associated with chronic inflammation in
25 your experience; is that right?

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1 MS. O'DELL: Object to the form.
2 THE WITNESS: That's correct.
3 BY MR. ZELLERS:
4 Q. In your report, you state (as read):
5 "An inflammatory reaction caused
6 by talcum powder on the tube and
7 surface of the ovary results in
8 genetic mutations and
9 carcinogenesis."
10 Is that right?
11 A. Yes.
12 Q. And you cite on page 9 in your report --
13 well, strike that.
14 So what authority supports that statement?
15 A. What was the question again?
16 Q. Sure. In your report, page 9, under
17 "Plausibility," second sentence, you state (as read):
18 "An inflammatory reaction caused
19 by talcum powder on the tube and
20 surface of the ovary results in
21 genetic mutations and
22 carcinogenesis."
23 What authority supports that statement?
24 A. The sequence of events from perineal talc
25 exposure to ovarian cancer and the mechanism of

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1 chronic inflammation on that ovary over a period of
2 time results in the gene mutation which then becomes
3 ovarian cancer.
4 Q. On what authority, on what study, are you
5 relying for that statement?
6 A. On the epidemiologic data showing that the
7 use of perineal talc results in ovarian cancer.
8 Q. But those studies don't state and find that
9 it's an inflammatory reaction caused by talcum powder
10 on the tube and the ovary, do they?
11 A. By the time the patient has ovarian cancer,
12 you don't see that.
13 Q. So my question is you've made the statement,
14 "An inflammatory reaction caused by talcum powder on
15 the tube and surface of the ovary results in genetic
16 mutations and carcinogenesis."
17 What study can I go look at, what study can
18 I read, what study are you relying on for that
19 statement?
20 A. What I just described to you. The study is
21 that the patients have ovarian cancer.
22 Q. Please name the study that you're relying on
23 for that proposition.
24 A. All the epidemiologic studies that we've been
25 talking about today in totality show the association

<p style="text-align: right;">Page 234</p> <p>1 between the exposure of talcum powder to women's</p> <p>2 perineum and ovarian cancer.</p> <p>3 Q. And it's your testimony that all of those</p> <p>4 studies discuss the inflammatory reaction as the</p> <p>5 causal mechanism; is that right?</p> <p>6 MS. O'DELL: Object to the form.</p> <p>7 THE WITNESS: Those studies do not</p> <p>8 discuss the mechanism in all studies. Some do.</p> <p>9 BY MR. ZELLERS:</p> <p>10 Q. So here's what I want: You're saying here</p> <p>11 "An inflammatory reaction caused by talcum powder on</p> <p>12 the tube and surface of the ovary results in genetic</p> <p>13 mutations and carcinogenesis."</p> <p>14 What study are you referring to, are you</p> <p>15 relying on, for that statement?</p> <p>16 A. That the patient got ovarian cancer. She had</p> <p>17 carcinogenesis. She had gene mutations caused by</p> <p>18 chronic inflammation that led to cancer. And then we</p> <p>19 operated on the patient and found she had cancer.</p> <p>20 Q. What is the study that says that the</p> <p>21 mechanism, the biologic mechanism, was an inflammatory</p> <p>22 reaction caused by talcum powder on the tube and</p> <p>23 surface of the ovary?</p> <p>24 A. Would you like to turn to laboratory studies?</p> <p>25 Q. Is there a study that you're relying on for</p>	<p style="text-align: right;">Page 236</p> <p>1 that inflammation is occurring when Johnson's baby</p> <p>2 powder is put into culture with a very normal ovarian</p> <p>3 cancer -- normal ovarian cells.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. You'd agree that the research regarding</p> <p>6 whether chronic inflammation can cause ovarian cancer</p> <p>7 is ongoing; is that right?</p> <p>8 A. I think cancer research in general is</p> <p>9 ongoing.</p> <p>10 Q. Most of the studies that you cite talking</p> <p>11 about chronic inflammation refer to chronic</p> <p>12 inflammation as a hypothesis of one of the ways cancer</p> <p>13 might form in the ovary; is that right?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: I think it's the most</p> <p>16 likely -- more likely than not that's the reason that</p> <p>17 ovarian cancer forms on the ovary.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. But it is a hypothesis which scientists and</p> <p>20 medical professionals are studying; is that right?</p> <p>21 MS. O'DELL: Objection to form.</p> <p>22 THE WITNESS: It's being studied, and</p> <p>23 evidence coming out of laboratories is confirming that</p> <p>24 hypothesis that we have in human beings.</p> <p>25</p>
<p style="text-align: right;">Page 235</p> <p>1 that statement?</p> <p>2 A. There's no way somebody could do a study.</p> <p>3 Q. All right.</p> <p>4 A. They do serial biopsies of the ovary, watch</p> <p>5 for those gene mutations, and then watch for cancer to</p> <p>6 occur, and then say, hey, chronic inflammation led to</p> <p>7 cancer several years later. I don't know how anybody</p> <p>8 could do such a study.</p> <p>9 Q. In your report, you state -- this is also on</p> <p>10 page 9, under "Coherence" (as read):</p> <p>11 "Epidemiologic data, in vitro and</p> <p>12 in vivo research, are consistent</p> <p>13 in explaining the pathogenesis of</p> <p>14 epithelial ovarian cancer through</p> <p>15 the inflammatory methods described</p> <p>16 above."</p> <p>17 Did I read that correctly?</p> <p>18 A. Yes, sir.</p> <p>19 Q. How does epidemiological data support your</p> <p>20 inflammation theory?</p> <p>21 MS. O'DELL: Objection to the form.</p> <p>22 THE WITNESS: The inflammation theory</p> <p>23 is the only plausible theory that I think we have to</p> <p>24 explain why talcum powder can cause ovarian cancer.</p> <p>25 And we see, then, in Dr. Saed's laboratory</p>	<p style="text-align: right;">Page 237</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. You are familiar with a paper published by</p> <p>3 Merritt in 2008, "Talcum Powder, Chronic Pelvic</p> <p>4 Inflammation, and NSAIDs in Relation to Risk of</p> <p>5 Epithelial Ovarian Cancer"; is that right?</p> <p>6 A. I've seen it.</p> <p>7 Q. All right. And you cite that in Exhibit B to</p> <p>8 your report. We've marked that as Exhibit 6 to this</p> <p>9 deposition.</p> <p>10 That's an Australian-wide case-control study</p> <p>11 of around 1500 women with invasive and low malignant</p> <p>12 potential ovarian tumors and 1500 population-based</p> <p>13 controls.</p> <p>14 Does that refresh your recollection?</p> <p>15 MS. O'DELL: Are you speak of Merritt</p> <p>16 2007?</p> <p>17 MR. ZELLERS: I thought I was speaking</p> <p>18 of Merritt 2008, which the doctor refers to in his</p> <p>19 additional materials-considered list on page 17.</p> <p>20 MS. O'DELL: Let's make sure we've got</p> <p>21 that. And that's "Talcum Powder, Chronic</p> <p>22 Inflammation, NSAIDs in Relation to the Risk of</p> <p>23 Epithelial Ovarian Cancer"?</p> <p>24 MR. ZELLERS: That's correct.</p> <p>25 MS. O'DELL: Okay.</p>

<p style="text-align: right;">Page 238</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. And let me try to cut to the chase, Doctor,</p> <p>3 so when you look at it, we can --</p> <p>4 The study concludes that, on balance,</p> <p>5 chronic inflammation does not play a major role in the</p> <p>6 development of ovarian cancer; is that right?</p> <p>7 A. I would have to reread this study if you're</p> <p>8 reading from some particular place. I don't recall</p> <p>9 exactly how this study was even designed or executed.</p> <p>10 Q. Take a look -- and we'll mark this as an</p> <p>11 exhibit. Deposition Exhibit 28 is the Merritt paper.</p> <p>12 (Exhibit No. 28 was marked for identification.)</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Doctor, is this the same as what you're</p> <p>15 looking at there?</p> <p>16 A. Yes.</p> <p>17 Q. This is a study that you cite in support of</p> <p>18 your opinions; is that right?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 I think it's referenced in his materials list. It's</p> <p>21 not cited in his report.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. It's a study that you felt was at least</p> <p>24 important enough to refer to in your</p> <p>25 materials-considered list; is that right?</p>	<p style="text-align: right;">Page 240</p> <p>1 A. Okay. Without knowing what -- how we got to</p> <p>2 this discussion, go right ahead.</p> <p>3 Q. Well, I'm citing your paper or at least one</p> <p>4 of the papers you read and considered.</p> <p>5 A. I have not read every word of every one of</p> <p>6 these papers. And you can imagine that, and you can</p> <p>7 appreciate that.</p> <p>8 Q. You've not read the studies that are</p> <p>9 contained in your materials-considered list --</p> <p>10 MS. O'DELL: Objection.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. -- Exhibit 6 to the deposition?</p> <p>13 MS. O'DELL: Excuse me. Objection.</p> <p>14 Misrepresents his testimony.</p> <p>15 What's your question?</p> <p>16 BY MR. ZELLERS:</p> <p>17 Q. Well, do you want to answer that question?</p> <p>18 You've not read each and every one of the studies;</p> <p>19 correct?</p> <p>20 MS. O'DELL: Objection. Misrepresents</p> <p>21 his testimony. I think what he had testified to</p> <p>22 earlier is that he had not read every word of every</p> <p>23 study but had read the abstracts of -- certainly of</p> <p>24 every one.</p> <p>25 THE WITNESS: Right. And I haven't</p>
<p style="text-align: right;">Page 239</p> <p>1 A. Along with all these other materials, yes.</p> <p>2 Q. Well, if we go to the "Discussion" on</p> <p>3 page 174 of Deposition Exhibit 28 -- are you with me</p> <p>4 on 174?</p> <p>5 A. I'm on 174. Which paragraph?</p> <p>6 Q. Well, the very first --</p> <p>7 A. Can I back up? I'd like to refresh my memory</p> <p>8 of what this study was about.</p> <p>9 It was a case-control study, 1500 patients.</p> <p>10 Confirmed statistical significance of increased</p> <p>11 ovarian cancer risk associated with use of talc.</p> <p>12 Relative risk 1.17. Strongest were serous. I'm</p> <p>13 trying to get down to your inflammation question.</p> <p>14 Q. Well, it also talks about --</p> <p>15 MS. O'DELL: I don't think the doctor</p> <p>16 was finished.</p> <p>17 MR. ZELLERS: Okay. If the doctor</p> <p>18 wasn't finished, what else do you need to say, Doctor,</p> <p>19 before --</p> <p>20 THE WITNESS: I'm trying to find out</p> <p>21 where -- all's I'm reading is the abstract, not even</p> <p>22 the details of the study so far.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. So I'd like you to go to "Discussion," which</p> <p>25 is on page 174.</p>	<p style="text-align: right;">Page 241</p> <p>1 committed every abstract to memory. I'm sure you can</p> <p>2 appreciate that too.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. I can, and that's why you have it in front of</p> <p>5 you.</p> <p>6 A. Okay.</p> <p>7 Q. So if we go to page 174, "Discussion," do you</p> <p>8 see that? See that paragraph on the left-hand side?</p> <p>9 A. I see the page. Which paragraph do you want</p> <p>10 to see?</p> <p>11 Q. Well, do you see the word "Discussion"?</p> <p>12 A. Yes.</p> <p>13 Q. All right. The first paragraph under</p> <p>14 "Discussion," the last sentence (as read):</p> <p>15 "These results, in combination</p> <p>16 with previous studies, suggest</p> <p>17 that chronic inflammation is</p> <p>18 unlikely to play a major role in</p> <p>19 the development of ovarian</p> <p>20 cancer."</p> <p>21 Is that the statement -- did I read that</p> <p>22 correctly?</p> <p>23 A. I don't think so. Says (as read):</p> <p>24 "May be linked to increased risk</p> <p>25 of developing ovarian cancer."</p>

<p style="text-align: right;">Page 242</p> <p>1 Are we reading the same -- you're reading 2 the first sentence under "Discussion"? 3 Q. No. I'm reading the last sentence of 4 "Discussion" -- last sentence of the first paragraph. 5 A. Okay. You read it correctly. 6 Q. All right. And then if we go to the 7 right-hand side, on the same page of the last 8 paragraph, the first two sentences state (as read): 9 "If inflammation plays a role in 10 the etiology of ovarian cancer, 11 then it would be expected that PID 12 would be associated with increased 13 risk of ovarian cancer. PID was 14 not associated with elevated risk 15 of ovarian tumors in our data, 16 confirming several previous 17 reports of no association with PID 18 in studies of all subtypes of 19 ovarian cancer." 20 Did I read that correctly? 21 A. You did. 22 Q. So this study concludes that, on balance, 23 chronic inflammation does not play a major role in the 24 development of ovarian cancer; correct? 25 A. So PID is pelvic inflammatory disease. Is</p>	<p style="text-align: right;">Page 244</p> <p>1 opinions contained in your report? 2 MS. O'DELL: Objection to form. 3 THE WITNESS: That it is well 4 established, in my opinion, that pelvic inflammatory 5 disease is a risk factor for ovarian cancer. 6 BY MR. ZELLERS: 7 Q. Do you agree you cannot ignore the data that 8 doesn't support your opinion and are only relying or 9 looking at data that does support your opinion? 10 MS. O'DELL: Object to the form. 11 THE WITNESS: My opinion is based on a 12 larger body of evidence and that other authorities, 13 not my opinion, have established that PID is a risk 14 factor. 15 MS. BOCKUS: Object. Nonresponsive. 16 MR. ZELLERS: Move to strike as 17 nonresponsive. 18 BY MR. ZELLERS: 19 Q. Do you agree that in doing a proper expert 20 analysis, you need to review and consider the studies 21 that both support your opinions and the studies that 22 do not support your opinions? 23 A. Absolutely. That's my methodology. 24 Q. And you believe that you have done that in 25 the discussion in your report; is that right?</p>
<p style="text-align: right;">Page 243</p> <p>1 that what you understand it? 2 Q. Yes. 3 A. So pelvic inflammatory disease is an acute 4 infection treated with antibiotics and usually 5 resolves with proper treatment. So it's not a chronic 6 infection. Having said that, PID is recognized as a 7 risk factor in many of the studies -- many of the 8 documents that you've referred to earlier this 9 morning. 10 So this particular case-control study 11 doesn't identify PID as a risk; but, in totality, 12 pelvic inflammatory disease is considered a risk 13 factor for ovarian cancer. 14 Q. What study do you rely on for your opinion 15 that pelvic inflammatory disease is a risk factor or 16 causative of ovarian cancer? 17 A. If I could turn back to the documents you 18 were using earlier today from either the CDC or -- 19 Q. And just refer to them generally, and then 20 we'll take a look. The CDC -- 21 A. Well, I mean, the risk -- I'm not sure which 22 one it was, but they are -- 23 Q. Let me ask another question, then. 24 What methodology did you employ to consider 25 the findings of the Merritt paper in coming to the</p>	<p style="text-align: right;">Page 245</p> <p>1 A. I believe so. 2 Q. All right. Do you agree that the studies 3 relating to NSAIDs are not consistent in terms of 4 establishing that NSAIDs, which reduce inflammation, 5 are associated with reduced ovarian cancer risk? 6 A. That's my understanding. 7 Q. Wouldn't you expect, if your theory of 8 inflammation is correct, that there would be 9 consistency among the NSAID studies and that they 10 would be consistently associated with reduced ovarian 11 cancer risk? 12 A. I'd have to review those studies in more 13 detail. I don't know what the doses of the NSAIDs 14 were, how chronically they were used, whether they 15 started at the time the chronic inflammation started 16 or later. 17 Q. Would you agree that the literature that you 18 cite and that you rely upon for your inflammation 19 theory cites and just shows inflammation, not chronic 20 inflammation, leading to cancer? 21 MS. O'DELL: Object to the form. 22 THE WITNESS: I'm talking about chronic 23 inflammation, to be clear. 24 BY MR. ZELLERS: 25 Q. Let's take a quick look at your report.</p>

<p style="text-align: right;">Page 246</p> <p>1 Page 4, you cite Eberl 1948, Redic 1988, and</p> <p>2 1993 NTP study of rats and mice for the proposition</p> <p>3 that talcum powder is known to elicit an inflammatory</p> <p>4 response in animals and humans. Is that right?</p> <p>5 A. Yes.</p> <p>6 Q. Those studies just show an acute inflammatory</p> <p>7 response; is that right?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: I don't recall that,</p> <p>10 but...</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Well, are you familiar with the FDA's 2014</p> <p>13 response to the citizens petition which we talked</p> <p>14 about earlier?</p> <p>15 A. Yeah. Let me pull that out again.</p> <p>16 Q. Sure. Do you have that available?</p> <p>17 A. There's an exhibit here.</p> <p>18 Q. I have it as Exhibit 19.</p> <p>19 Do you see that -- do you have that in front</p> <p>20 of you?</p> <p>21 A. I have the exhibit.</p> <p>22 Q. So go to page 3, where the authors talk about</p> <p>23 the toxicologic findings.</p> <p>24 Do you see that?</p> <p>25 A. I'll get there in a second.</p>	<p style="text-align: right;">Page 248</p> <p>1 Q. But the FDA noted -- and I'm looking at</p> <p>2 page 4 -- that (as read):</p> <p>3 "The investigators conceded that</p> <p>4 they had problems with the aerosol</p> <p>5 generation system and that the</p> <p>6 study did not include positive and</p> <p>7 negative dust controls."</p> <p>8 Is that right?</p> <p>9 A. That's what it says.</p> <p>10 Q. The FDA went on to conclude that (as read):</p> <p>11 "In light of these shortcomings, a</p> <p>12 panel of experts at the 1994</p> <p>13 ISRTP/FDA workshop declared that</p> <p>14 the 1993 NTP study had no</p> <p>15 relevance to human risk."</p> <p>16 Did I read that correctly?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: You read that correctly,</p> <p>19 and this -- that study was -- that workshop was</p> <p>20 convened a decade before this letter was written.</p> <p>21 There was definitely more information available that</p> <p>22 the FDA, once again, chose to not include or ignore.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Well, let's take a look at just a couple of</p> <p>25 the studies that you refer to in your report.</p>
<p style="text-align: right;">Page 247</p> <p>1 Q. Sure.</p> <p>2 Can I ask you a question?</p> <p>3 A. Just give me one minute, please.</p> <p>4 Okay.</p> <p>5 Q. The FDA, in reviewing the toxicology findings</p> <p>6 and specifically commenting on the 1993 National</p> <p>7 Toxicology Program, published a study, they state --</p> <p>8 and I'm reading now the last paragraph (as read):</p> <p>9 "The study lacks convincing</p> <p>10 scientific support because of</p> <p>11 serious flaws in its design and</p> <p>12 conduct, including the</p> <p>13 investigators used micronized talc</p> <p>14 instead of consumer-grade talc,</p> <p>15 resulting in the experimental</p> <p>16 protocol not being reflective of</p> <p>17 human exposure conditions in terms</p> <p>18 of particle size."</p> <p>19 Did I read that correctly?</p> <p>20 A. Well, yes. But that's taken out of context</p> <p>21 to what's above here from the NTP report.</p> <p>22 Q. Have you made a determination in this case</p> <p>23 about the size of the particles in talcum powder</p> <p>24 products?</p> <p>25 A. They vary in size, from my understanding.</p>	<p style="text-align: right;">Page 249</p> <p>1 You cite to the Buz'Zard 2007 study; is that</p> <p>2 right?</p> <p>3 A. Yes.</p> <p>4 Q. You rely on the Buz'Zard study to support</p> <p>5 your view that talcum powder causes chronic</p> <p>6 inflammation that leads to ovarian cancer. This is</p> <p>7 page 4 of your report, second-to-last paragraph.</p> <p>8 A. Yes. I'm trying to pull out the Buz'Zard</p> <p>9 paper here.</p> <p>10 Q. Do you need me to give it to you, or do you</p> <p>11 have it in front of you?</p> <p>12 A. I have it, sir.</p> <p>13 Q. All right. So this study was conducted in a</p> <p>14 nutritional lab, not a cancer lab; is that right?</p> <p>15 A. Yes.</p> <p>16 Q. The purpose of the study was to assess</p> <p>17 whether there was a certain effect from pine bark</p> <p>18 supplements; is that right?</p> <p>19 A. There was an effect to neutralize the impact</p> <p>20 of talcum powder.</p> <p>21 Q. Did you consider the type of cells that were</p> <p>22 evaluated in the Buz'Zard study?</p> <p>23 And let me make it easy for you. The</p> <p>24 Buz'Zard study used immortalized cells; is that right?</p> <p>25 I'm looking at the second page, left column, "Cell</p>

<p style="text-align: right;">Page 250</p> <p>1 culture and treatment."</p> <p>2 A. I'm trying to find where they talk about</p> <p>3 human origin. Temperatures. Immortalized, yes.</p> <p>4 Normal ovarian epithelium and normal granulosa cells.</p> <p>5 It's not just generic immortalized cells.</p> <p>6 Q. But the study used immortalized cells; is</p> <p>7 that correct?</p> <p>8 A. Immortalized ovarian cells.</p> <p>9 Q. Did you investigate whether the ovarian cells</p> <p>10 that they used were genetically altered?</p> <p>11 A. Did I investigate whether they were</p> <p>12 genetically altered?</p> <p>13 Q. Yes.</p> <p>14 A. I had no opportunity to investigate that</p> <p>15 question.</p> <p>16 Q. If the Buz'Zard study used genetically</p> <p>17 altered ovarian cells that did not have the p53</p> <p>18 protein, would that affect your analysis of Buz'Zard?</p> <p>19 A. I would have to turn to a molecular biologist</p> <p>20 to tell me what impact that might have had on the</p> <p>21 impact of this study.</p> <p>22 Q. Well, you yourself, as we talked about in the</p> <p>23 very beginning today in one of your early</p> <p>24 publications, a cell missing the p53 protein is not a</p> <p>25 normal human ovarian cell; is that right?</p>	<p style="text-align: right;">Page 252</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. Saed. You were citing the Saed studies, both</p> <p>3 2018, and now the Harper and Saed 2009 -- strike</p> <p>4 that -- 2019 abstract; is that right?</p> <p>5 A. Repeat the first one.</p> <p>6 Q. Sure. You're relying, in part, for your</p> <p>7 inflammation theory on Saed 2018, that chapter, and</p> <p>8 the Harper and Saed 2019 abstract; is that right?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: I'm relying on a paper --</p> <p>11 a review paper published in Gyn Oncology in 2017. Is</p> <p>12 that what you're talking about?</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Well, I thought Saed that you cite in your</p> <p>15 paper -- or your report -- was Saed 2018 and Harper</p> <p>16 and Saed 2019.</p> <p>17 Are you relying on a Saed 2017 paper as</p> <p>18 well?</p> <p>19 A. There's a review paper, "Updates on Oxidative</p> <p>20 Stress in Pathogenesis of Ovarian Cancer" that I am</p> <p>21 familiar with and is a very nice review paper</p> <p>22 describing oxidative stress and gene mutation.</p> <p>23 Q. Well, let me ask you a --</p> <p>24 A. But there's two other abstracts here that</p> <p>25 I think you're talking about.</p>
<p style="text-align: right;">Page 251</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: No, that's not what we</p> <p>3 were talking about this morning in the one 1993 study</p> <p>4 that I was a coauthor on. P53 mutation is what we</p> <p>5 were talking about.</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. Right. Well, looking at the Figure 3 of the</p> <p>8 Buz'Zard study 2007, "The inflammatory response does</p> <p>9 not increase with increasing doses of talcum powder."</p> <p>10 Is that right?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: It does up to a point.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Then stops; is that right?</p> <p>15 A. That's right. And then it goes down,</p> <p>16 probably because the talcum powder was killing the</p> <p>17 cells.</p> <p>18 MR. ZELLERS: Move to strike as</p> <p>19 nonresponsive.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. In fact, the study shows that higher doses of</p> <p>22 talcum powder are associated with lower ROS</p> <p>23 generation; is that right?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: That's what it says.</p>	<p style="text-align: right;">Page 253</p> <p>1 Q. Do you know that Dr. Saed is a paid expert</p> <p>2 for the plaintiffs' lawyers in this litigation?</p> <p>3 A. No.</p> <p>4 Q. Did you consider that fact in evaluating</p> <p>5 Dr. Saed's work?</p> <p>6 A. I believe he's an honest scientist and is</p> <p>7 doing good scientific work.</p> <p>8 Q. What is your basis for concluding that he's</p> <p>9 an honest scientist?</p> <p>10 A. He has a good reputation in the gynecologic</p> <p>11 oncology community. He's published peer review</p> <p>12 publications that have been -- undergone critical peer</p> <p>13 review.</p> <p>14 Q. Did Dr. Saed, in any of the publications that</p> <p>15 you have reviewed -- 2017, 2018, and 2019 -- disclosed</p> <p>16 that he's a paid expert for the plaintiff lawyers in</p> <p>17 this litigation?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: Not exactly in those</p> <p>20 words.</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Have you spoken with Dr. Saed?</p> <p>23 A. No. I've never met him.</p> <p>24 Q. Have you ever requested any information from</p> <p>25 Dr. Saed?</p>

<p style="text-align: right;">Page 254</p> <p>1 A. No, I have not.</p> <p>2 Q. The Saed study looked at immortalized cell</p> <p>3 lines; is that right?</p> <p>4 MS. O'DELL: Which study are you</p> <p>5 referring to?</p> <p>6 MR. ZELLERS: I'm referring to the 2018</p> <p>7 and 2009 publications that you have referenced with</p> <p>8 the doctor.</p> <p>9 MS. O'DELL: You said 2009 --</p> <p>10 MR. ZELLERS: I'm sorry. 2019. Excuse</p> <p>11 me.</p> <p>12 THE WITNESS: Just to be clear, just so</p> <p>13 we know the authors, so you're talking about Fletcher</p> <p>14 and Saed, the abstract?</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. I was referring to what you cite and</p> <p>17 reference in your report, which, at least in part, is</p> <p>18 Saed 2018 and Harper and Saed 2019.</p> <p>19 Did you review those studies and are you</p> <p>20 relying, at least in part, on those studies?</p> <p>21 A. Those studies and then with the subsequent</p> <p>22 full-length manuscript by Dr. Saed.</p> <p>23 Q. All right. And you're aware that Dr. Saed</p> <p>24 looked at immortalized cell lines; is that right?</p> <p>25 A. That is about the only way to do that kind of</p>	<p style="text-align: right;">Page 256</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I think we don't know how</p> <p>3 much talcum powder gets to the ovary.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. Can you cite any data showing that the level</p> <p>6 of concentration of exposure used in the Saed study</p> <p>7 has ever occurred in women with perineal talc use?</p> <p>8 A. I think that's an unknown answer.</p> <p>9 Q. Do you know what SNPs are, S-N-P-S?</p> <p>10 A. Yes. Single-nucleotide polymorphisms.</p> <p>11 Q. The Saed abstract and article looked at</p> <p>12 single-nucleotide polymorphisms, or SNPs; is that</p> <p>13 right?</p> <p>14 A. That's correct.</p> <p>15 Q. They are changes to the individual building</p> <p>16 blocks of DNA; is that right?</p> <p>17 A. Yes.</p> <p>18 Q. SNPs can be caused by a number of agents or</p> <p>19 factors; is that right?</p> <p>20 A. I believe so.</p> <p>21 Q. Most SNPs have no effect on health or</p> <p>22 development; is that right?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: Individual SNPs. So SNPs</p> <p>25 do represent a gene mutation, and they do have impact</p>
<p style="text-align: right;">Page 255</p> <p>1 research, is with immortalized cells.</p> <p>2 Q. Are you aware that Dr. Saed has testified</p> <p>3 that the cells were modified with a virus to make them</p> <p>4 undergoing -- strike that -- to make them keep</p> <p>5 undergoing division in vitro?</p> <p>6 A. I was not aware of that, but it may be a</p> <p>7 laboratory technique that's necessary to do continuous</p> <p>8 studies on the same cell line.</p> <p>9 Q. Are you aware that Dr. Saed testified that</p> <p>10 the p53 gene was turned off in those cells?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: I was not aware of his</p> <p>13 testimony at all. I've not read his deposition.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. What methodology did you use to apply the</p> <p>16 Saed results to normal cells in actual organs?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: I think this is the best</p> <p>19 one can do, I presume -- I'm not a laboratory</p> <p>20 scientist, but the best they can do to replicate</p> <p>21 in vitro the impact of talcum powder on ovarian cells.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. Can you cite any data showing that the</p> <p>24 concentrations of exposure used in the Saed study are</p> <p>25 the same as would be encountered in cosmetic use?</p>	<p style="text-align: right;">Page 257</p> <p>1 on the carcinogenesis, if you will, or development of</p> <p>2 cancer. Not in all cases.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. What evidence do you have that the SNPs that</p> <p>5 Dr. Saed observed are associated with ovarian cancer?</p> <p>6 A. We see that this chronic inflammation caused</p> <p>7 by talcum powder in his laboratory is creating SNPs,</p> <p>8 gene mutations. Gene mutations then become cancer.</p> <p>9 Q. What studies can you cite that show that</p> <p>10 those SNPs have a statistically significant</p> <p>11 association with ovarian cancer?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: I would have to return to</p> <p>14 the literature. There's a broad literature about SNPs</p> <p>15 that are more than the laboratory right now. But the</p> <p>16 combination of different SNPs is recognized as causing</p> <p>17 cancer.</p> <p>18 I don't know the specific SNPs that you're</p> <p>19 referring to.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Other SNPs have no effect on health or</p> <p>22 development; correct?</p> <p>23 A. Some.</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25</p>

<p style="text-align: right;">Page 258</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. Oxidative stress, would you agree that</p> <p>3 reactive oxygen species are a normal part of cell</p> <p>4 physiology?</p> <p>5 A. To some degree.</p> <p>6 Q. Do all substances that cause oxidative stress</p> <p>7 also cause cancer?</p> <p>8 A. No.</p> <p>9 Q. Does the presence of oxidative stress in</p> <p>10 tissue indicate that cancer will develop in that</p> <p>11 tissue?</p> <p>12 A. It can develop in that tissue.</p> <p>13 MS. O'DELL: Excuse me, Mike. Whenever</p> <p>14 you get to a breaking -- stopping point, we've been</p> <p>15 going about an hour and 40 minutes, I think, something</p> <p>16 like that.</p> <p>17 MR. ZELLERS: Sure. Let me just finish</p> <p>18 a couple of questions here.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. The presence of oxidative stress in a tissue</p> <p>21 may or may not indicate that cancer will develop in</p> <p>22 that tissue; is that fair?</p> <p>23 A. Yes, that's correct.</p> <p>24 Q. If exposure to a substance causes oxidative</p> <p>25 stress in a certain tissue, does that mean that the</p>	<p style="text-align: right;">Page 260</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. Dr. Clarke-Pearson, are you familiar with the</p> <p>3 term "confounding"?</p> <p>4 A. Yes.</p> <p>5 Q. That's where the presence of another</p> <p>6 association confuses the relationship between the</p> <p>7 exposure and disease being studied; correct?</p> <p>8 A. That sounds like a reasonable definition.</p> <p>9 Q. For example, if you're studying the</p> <p>10 association between coffee and pancreatic cancer, you</p> <p>11 need to be mindful of whether cigarette smoking is</p> <p>12 more common in coffee drinkers than in the rest of the</p> <p>13 population; correct?</p> <p>14 A. And if there's some synergism between the</p> <p>15 two.</p> <p>16 Q. Cigarette smoking could be a confounder in</p> <p>17 that situation; is that right?</p> <p>18 A. Yes.</p> <p>19 Q. Because if more coffee drinkers are smokers</p> <p>20 than non-coffee drinkers, an association between</p> <p>21 coffee drinking and pancreatic cancer might be due to</p> <p>22 the smoking, not the coffee drinking; correct?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: That's where a researcher</p> <p>25 would need to control for those variables.</p>
<p style="text-align: right;">Page 259</p> <p>1 substance will cause oxidative stress in all types of</p> <p>2 tissues?</p> <p>3 A. Not necessarily.</p> <p>4 Q. Does the body have protective mechanisms that</p> <p>5 can limit tissue damage from oxidative stress?</p> <p>6 A. Yes.</p> <p>7 Q. What publications indicate that oxidative</p> <p>8 stress is involved in the development of ovarian</p> <p>9 cancer?</p> <p>10 A. We're again talking about the evidence that</p> <p>11 there's gene mutations being caused by oxidative</p> <p>12 stress.</p> <p>13 Q. Can you cite to me a publication?</p> <p>14 A. That results in ovarian cancer?</p> <p>15 Q. Yes.</p> <p>16 A. No, I can't cite that to you. I can show you</p> <p>17 the laboratory evidence that's leading to that</p> <p>18 conclusion that it will happen one day.</p> <p>19 MR. ZELLERS: Let's take a break.</p> <p>20 THE VIDEOGRAPHER: Going off the record</p> <p>21 at 3:22 p.m.</p> <p>22 (Recess taken from 3:22 p.m. to 3:38 p.m.)</p> <p>23 THE VIDEOGRAPHER: Back on the record</p> <p>24 at 3:38 p.m.</p> <p>25</p>	<p style="text-align: right;">Page 261</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. Confounding can distort results in</p> <p>3 epidemiologic studies; is that right?</p> <p>4 A. Yes.</p> <p>5 Q. You agree that residual confounding is</p> <p>6 possible in every observational study; correct?</p> <p>7 A. I'm not sure I understand what "residual</p> <p>8 confounding" is.</p> <p>9 Q. Well, residual confounding is confounding</p> <p>10 that remains even after you have controlled for known</p> <p>11 confounders.</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: So let me read your</p> <p>14 question.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Or I can ask it again.</p> <p>17 A. Okay.</p> <p>18 Q. I'll ask it again.</p> <p>19 You agree that residual confounding is</p> <p>20 possible in every observational study; correct?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: That is possible.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. You agree that it's possible that unmeasured</p> <p>25 confounders may be present in every observational</p>

<p style="text-align: right;">Page 262</p> <p>1 study; correct?</p> <p>2 MS. O'DELL: Objection to form.</p> <p>3 THE WITNESS: Yes, that's possible.</p> <p>4 BY MR. ZELLERS:</p> <p>5 Q. It's impossible to say that all known and</p> <p>6 unknown confounding factors have been controlled for</p> <p>7 in any given study; is that right?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: That's why we do</p> <p>10 randomized control trials if possible.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Many new factors possibly involved in ovarian</p> <p>13 cancer are just being published in the literature; is</p> <p>14 that right?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 THE WITNESS: What's being -- what</p> <p>17 I was referring to as new factors are really the</p> <p>18 biological mechanisms by which ovarian cancer occurs.</p> <p>19 BY MR. ZELLERS:</p> <p>20 Q. Well, through time, there have been different</p> <p>21 factors or potential factors involved in ovarian</p> <p>22 cancer; is that right?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: Yes.</p> <p>25</p>	<p style="text-align: right;">Page 264</p> <p>1 Obesity in adolescence may or may not be.</p> <p>2 I'm not aware of the data on that.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. Factors weren't controlled for, Chlamydia</p> <p>5 infection, history of weight gain, those are factors</p> <p>6 that were not controlled for -- strike that. Let me</p> <p>7 be more precise.</p> <p>8 A history of Chlamydia infection and a</p> <p>9 history of weight gain during adolescence are two</p> <p>10 recent factors that are being discussed among the</p> <p>11 gynecologic oncology community; correct?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: I'm not aware of the</p> <p>14 obesity in adolescence. It may be.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Those factors were not controlled for in any</p> <p>17 of the published talc ovarian cancer studies; correct?</p> <p>18 A. That's correct.</p> <p>19 Q. You rely on Terry 2013 in your report. It's</p> <p>20 part of your graph on -- or your table on page 7; is</p> <p>21 that right?</p> <p>22 A. Yes.</p> <p>23 Q. Terry 2013 did not adjust for hormone</p> <p>24 replacement therapy usage; is that right?</p> <p>25 A. I would have to look to see what he did and</p>
<p style="text-align: right;">Page 263</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. Some of those are borne out and some are not;</p> <p>3 is that right?</p> <p>4 A. I'm not sure what you mean --</p> <p>5 MS. O'DELL: Object to the form.</p> <p>6 THE WITNESS: -- by factors aren't</p> <p>7 borne out.</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. Well, at one point, was it thought that a</p> <p>10 mumps virus was a potential viral etiology of ovarian</p> <p>11 cancer?</p> <p>12 A. Not that I'm aware of. When was that?</p> <p>13 Q. You're not aware of that?</p> <p>14 A. I'm not aware of it.</p> <p>15 Q. All right. Well, how about Chlamydia</p> <p>16 infection, a history of Chlamydia infection and a</p> <p>17 history of weight gain during adolescence are two</p> <p>18 recent examples of potentially new factors involved</p> <p>19 with ovarian cancer; correct?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: Well, we just finished</p> <p>22 talking about pelvic inflammatory disease, and</p> <p>23 Chlamydia is a pelvic inflammatory disease, so that</p> <p>24 may be a specific new factor. But we already have</p> <p>25 accepted PID as a risk factor.</p>	<p style="text-align: right;">Page 265</p> <p>1 didn't adjust for.</p> <p>2 Q. Is that easy for you to do?</p> <p>3 A. I'm sorry?</p> <p>4 Q. Is that easy for you to do?</p> <p>5 A. It's buried in here under fine print, I'm</p> <p>6 sure.</p> <p>7 Q. Let me -- let me ask the question this way:</p> <p>8 If hormone replacement therapy is a risk -- well,</p> <p>9 strike that.</p> <p>10 Is hormone replacement therapy a risk factor</p> <p>11 for ovarian cancer?</p> <p>12 A. We believe it is.</p> <p>13 Q. If Terry 2013 -- and I'm asking you to assume</p> <p>14 this.</p> <p>15 If Terry 2013 did not account for that</p> <p>16 potential confounding factor, then we wouldn't know</p> <p>17 whether the odds ratio in the study would have been</p> <p>18 lower if the authors had made that adjustment;</p> <p>19 correct?</p> <p>20 MS. O'DELL: Object to the form.</p> <p>21 THE WITNESS: Or it may have been</p> <p>22 higher.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. We don't know; correct?</p> <p>25 MS. O'DELL: Object to the form.</p>

<p style="text-align: right;">Page 266</p> <p>1 THE WITNESS: We don't know.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. Asbestos. You're, as you've told us today,</p> <p>4 an expert in asbestos; is that right?</p> <p>5 A. I feel comfortable talking about asbestos.</p> <p>6 Q. You feel comfortable, as you told us and</p> <p>7 testified earlier, testifying as an expert on</p> <p>8 asbestos; is that right?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 THE WITNESS: I don't think I said</p> <p>11 I was an expert in asbestos.</p> <p>12 BY MR. ZELLERS:</p> <p>13 Q. Well, on page 9 of your report, you say</p> <p>14 (as read):</p> <p>15 "There are numerous reports in the</p> <p>16 medical literature of minerals</p> <p>17 similar to talc causing cancer.</p> <p>18 Probably the most significant</p> <p>19 example is asbestos and lung</p> <p>20 cancer/mesothelioma."</p> <p>21 Is that right?</p> <p>22 A. Yes. I'm trying to find where I say that.</p> <p>23 I -- it sounds perfectly right.</p> <p>24 I'm sorry. I'm having a hard time finding</p> <p>25 it. I looked under -- which topic are you reading</p>	<p style="text-align: right;">Page 268</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. How is talc similar to asbestos?</p> <p>3 A. Talc has fibrous talc in it. Assuming</p> <p>4 there's -- let me just make an assumption that there's</p> <p>5 no asbestos in talc. So that's what you're asking me</p> <p>6 about.</p> <p>7 Q. I'm asking you --</p> <p>8 A. A hypothetical that talc doesn't have --</p> <p>9 talcum powder doesn't have asbestos in it.</p> <p>10 Q. My question to you is that you state here</p> <p>11 that there are minerals similar to talc causing</p> <p>12 cancer. And what I want to know is how is talc as a</p> <p>13 mineral similar to asbestos?</p> <p>14 A. Talc has a fiber in it. Fibrous talc is</p> <p>15 similar to asbestos.</p> <p>16 Q. Can you be any more specific?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: It's considered a</p> <p>19 carcinogen. It's a long bundle of fibers.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Talc is a long bundle of fibers?</p> <p>22 A. Fibrous talc is.</p> <p>23 Q. Well, I'm asking you about talc right now.</p> <p>24 Is talc different than fibrous talc?</p> <p>25 A. If you are talking hypothetically about platy</p>
<p style="text-align: right;">Page 267</p> <p>1 from?</p> <p>2 Q. All right. You got page 9, under "Analogy"?</p> <p>3 Or --</p> <p>4 A. Yes.</p> <p>5 Q. "There are numerous reports in the medical</p> <p>6 literature of minerals similar to talc causing cancer.</p> <p>7 Probably the most significant example is asbestos and</p> <p>8 lung cancer/mesothelioma."</p> <p>9 Did I read that correctly --</p> <p>10 A. Yes.</p> <p>11 Q. -- from your report?</p> <p>12 A. That's correct.</p> <p>13 Q. How is talc similar to asbestos?</p> <p>14 A. First of all, the -- a number of components</p> <p>15 in talcum powder have carcinogens in them. There's</p> <p>16 evidence that we haven't talked about yet that</p> <p>17 Johnson & Johnson baby powder and Shower to Shower had</p> <p>18 asbestos in it, that fibrous talc is a carcinogen</p> <p>19 according to IARC.</p> <p>20 And, in addition, heavy metals that are</p> <p>21 contained in Johnson & Johnson baby powder, two of</p> <p>22 them are considered carcinogens also.</p> <p>23 MR. ZELLERS: Move to strike as</p> <p>24 nonresponsive.</p> <p>25</p>	<p style="text-align: right;">Page 269</p> <p>1 talc only --</p> <p>2 Q. I'm talking about you as an expert and</p> <p>3 describing for us the differences in the minerals</p> <p>4 talc, fibrous talc, and asbestos.</p> <p>5 A. So platy talc hypothetically is probably not</p> <p>6 like asbestos, but it contains fibrous talc, which is</p> <p>7 a long, elongated mineral that can act in the human</p> <p>8 body similar to asbestos.</p> <p>9 Q. Can you be any more descriptive, or is that</p> <p>10 as far as you can go in terms of explaining how</p> <p>11 fibrous talc is similar to asbestos?</p> <p>12 A. Both cause a chronic inflammation in normal</p> <p>13 tissues and then go on to cause oxidative stress and</p> <p>14 mutations.</p> <p>15 Q. I'm talking more about the minerals. Can you</p> <p>16 be any more descriptive about how fibrous talc, the</p> <p>17 mineral, is similar to asbestos?</p> <p>18 MS. O'DELL: Objection to form.</p> <p>19 THE WITNESS: Pictures I've seen look</p> <p>20 like asbestos particles, and fibrous talc looked very</p> <p>21 similar.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. What other minerals that are similar to talc</p> <p>24 cause cancer?</p> <p>25 MS. O'DELL: Object to the form.</p>

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1 THE WITNESS: I'm not aware of any.
 2 BY MR. ZELLERS:
 3 Q. Are your opinions in this case dependent on
 4 talcum powder containing asbestos?
 5 A. No.
 6 Q. Do you believe that talcum powder that does
 7 not contain asbestos causes ovarian cancer?
 8 A. Yes.
 9 Q. If your -- if your assumption about
 10 contamination of talcum powder products with asbestos
 11 were not true, would that change your opinion in this
 12 case?
 13 A. No.
 14 MS. O'DELL: Object to the form.
 15 BY MR. ZELLERS:
 16 Q. Is it fair to say that you have not made any
 17 independent determination that the Johnson's baby
 18 powder and talcum powder products are contaminated
 19 with asbestos?
 20 MS. O'DELL: Objection to form.
 21 THE WITNESS: The only determination
 22 I've had is the evidence that I've seen.
 23 BY MR. ZELLERS:
 24 Q. You don't have the personal expertise to make
 25 that determination; is that right?

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1 A. I have the personal expertise to read reports
 2 from experts and --
 3 Q. Do you have the personal expertise to do the
 4 testing necessary to determine whether or not talc is
 5 contaminated with asbestos?
 6 A. No, I do not.
 7 Q. You're relying on the reports of Longo for
 8 that information; is that right?
 9 MS. O'DELL: Object to the form.
 10 THE WITNESS: And I think also testing
 11 that was performed by Johnson & Johnson, reported in
 12 the John Hopkins deposition.
 13 BY MR. ZELLERS:
 14 Q. Well, you're talking about the two exhibits
 15 that you looked at, one exhibit in John Hopkins'
 16 deposition and one exhibit in Julie Pier deposition;
 17 is that right?
 18 A. Yes.
 19 Q. You were given those documents by
 20 Dr. Thompson and counsel for plaintiffs; is that
 21 right?
 22 A. Or by Ms. O'Dell, I'm not sure who.
 23 Q. Or by Ms. O'Dell. I'll put her in the
 24 counsel of plaintiffs.
 25 You did not undertake a review of the

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1 literature on the topic of the alleged presence of
 2 asbestos in talcum powder; is that right?
 3 MS. O'DELL: Object to the form.
 4 THE WITNESS: The literature?
 5 BY MR. ZELLERS:
 6 Q. You're relying for their -- strike that.
 7 For the proposition that there is asbestos
 8 in the Johnson's baby powder and Shower to Shower
 9 product, your reviewing on the documents you were
 10 provided by counsel, the exhibit from John Hopkins'
 11 deposition, the exhibit from Julie Pier, and from the
 12 selected company documents they provided to you;
 13 correct?
 14 A. I'm also relying on a publication by A.M.
 15 Blount.
 16 Q. That's what we identified earlier; is that
 17 right?
 18 A. I believe so.
 19 Q. The A.M. Blount article deals with
 20 mesothelioma, not ovarian cancer; is that right?
 21 MS. O'DELL: Objection to form.
 22 THE WITNESS: It talks about the
 23 presence of asbestos in talcum powder.
 24 BY MR. ZELLERS:
 25 Q. Do you know that the deposition exhibits that

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1 you were given -- the exhibit to John Hopkins'
 2 deposition and the exhibit to Julie Pier's
 3 deposition -- that they were tables and exhibits that
 4 were created by the plaintiff attorneys?
 5 MS. O'DELL: Objection to form.
 6 THE WITNESS: I'm not aware of how
 7 these tables were created.
 8 BY MR. ZELLERS:
 9 Q. Do you know where the data in those exhibits
 10 came from?
 11 A. I do not.
 12 Q. Are you -- strike that.
 13 Have you made any effort to investigate any
 14 alternative explanations for the data in those charts?
 15 And I'm talking about the Hopkins and Pier deposition
 16 exhibits.
 17 A. No.
 18 Q. If scientists with Johnson & Johnson
 19 companies and Imerys scientists say that those tests
 20 don't actually show asbestos, you have no expertise to
 21 dispute that personally, do you?
 22 MS. O'DELL: Object to the form.
 23 THE WITNESS: Personally, no.
 24 BY MR. ZELLERS:
 25 Q. Have you looked at the evidence or been

<p style="text-align: right;">Page 274</p> <p>1 provided with the evidence of Johnson & Johnson 2 companies and Imerys that, in fact, those tests do not 3 show asbestos? 4 MS. O'DELL: Object to the form. 5 THE WITNESS: You're referring to the 6 charts that I have? 7 BY MR. ZELLERS: 8 Q. Yes. 9 A. I'm not aware of that. 10 Q. Have you confirmed that any of the talc 11 samples mentioned in those charts, the two exhibits of 12 Hopkins deposition and Pier deposition, were actually 13 from talc that was used in body powder? 14 A. I believe the testing that was reported in 15 Hopkins was from Johnson & Johnson. 16 Q. Number one, have you confirmed that any of 17 the talc samples mentioned in those charts were 18 actually from talc that was used in body powder? 19 MS. O'DELL: Objection to form. 20 THE WITNESS: I can't confirm that. 21 BY MR. ZELLERS: 22 Q. You realize that the vast majority of talc 23 isn't used for body powder; correct? 24 MS. O'DELL: Objection to form. 25 THE WITNESS: I don't know.</p>	<p style="text-align: right;">Page 276</p> <p>1 A. My recollection was, whatever technique they 2 used, they didn't find asbestos. 3 Q. Have you made any effort to quantify the 4 amount of any alleged contaminant in the Johnson's 5 baby powder products? 6 MS. O'DELL: Objection to form. 7 THE WITNESS: What contaminant are you 8 talking about? 9 BY MR. ZELLERS: 10 Q. Well, let's start with asbestos. 11 A. I haven't made any effort to quantify aside 12 from what's in the reports. 13 Q. Have you made any effort to quantify the 14 trace amounts of heavy metals that you contend are in 15 the baby powder? 16 A. I have not tried to quantitate that except 17 for what's in the reports. 18 Q. Have you attempted to quantify in any manner 19 the fragrance chemicals that you believe are contained 20 in the baby powder? 21 MS. O'DELL: Objection to form. 22 THE WITNESS: The fragrance chemicals 23 that I know are contained in the baby powder? 24 BY MR. ZELLERS: 25 Q. Well, you don't really know if any fragrance</p>
<p style="text-align: right;">Page 275</p> <p>1 BY MR. ZELLERS: 2 Q. Did you consider any testing of Johnson & 3 Johnson or Imerys that found no asbestos in the talcum 4 powder? 5 A. I presume there is. The report by Dr. Longo 6 didn't show it in every single sample. 7 Q. Well, did you consider -- did you review any 8 of that testing of either Johnson & Johnson companies 9 or Imerys that found no asbestos? 10 A. I was not aware of any data on that to that 11 point. 12 Q. Were you provided that data or those test 13 results by counsel for plaintiffs? 14 A. No. 15 Q. Have you reviewed the FDA's testing of talcum 16 powder products? 17 A. You'd have to show me that evidence. 18 Q. Do you recall, sitting here, whether or not 19 you have been provided with the FDA's testing of 20 talcum powder products? 21 A. I believe I've seen it. 22 Q. Have you made any effort -- well, strike 23 that. 24 The FDA's testing, do you recall whether it 25 found asbestos or did not find asbestos?</p>	<p style="text-align: right;">Page 277</p> <p>1 chemicals are contained in the baby powder. You have 2 reviewed some documents and materials prepared by 3 others which talk about that; right? 4 A. Yes. 5 Q. All right. Do you have an opinion on what 6 type of asbestos, if any, is in the Johnson's baby 7 powder? 8 A. Looking at the reports, there are several 9 types. 10 Q. Tell us what types you believe -- what types 11 of asbestos are found or -- strike that. 12 What types of asbestos are found in the baby 13 powder? 14 A. So this is from the Hopkins Report. 15 Tremolite. Crystalline. Some more crystalline. 16 Crystalline. Crystalline. Tremolite. Actinolite. 17 Actinolite. 18 Would you like me to go on? 19 Q. Well, you're just reading down from the 20 Hopkins, Exhibit 47; is that right? 21 A. That's correct. 22 Q. Do you know what type of asbestos is most 23 commonly associated with ovarian cancer? 24 MS. O'DELL: Object to the form. 25 THE WITNESS: I think they all are.</p>

<p style="text-align: right;">Page 278</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. That's your belief? That all types of</p> <p>3 asbestos are equally associated with ovarian cancer?</p> <p>4 A. I think they're all carcinogens.</p> <p>5 Q. Am I correct that, at least as you sit here,</p> <p>6 you believe that all forms of asbestos are associated</p> <p>7 with ovarian cancer?</p> <p>8 A. There's never been a randomized trial</p> <p>9 exposing women to different forms of asbestos to</p> <p>10 determine whether one is more carcinogenic than the</p> <p>11 other.</p> <p>12 Q. So your answer is yes; is that right?</p> <p>13 MS. O'DELL: Object to the form.</p> <p>14 MS. BOCKUS: I was going to object to</p> <p>15 his prior answer as nonresponsive.</p> <p>16 THE WITNESS: Your question was, "Am</p> <p>17 I correct?"</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. What I want to know --</p> <p>20 A. Do I believe that all forms of asbestos are</p> <p>21 associated with ovarian cancer? And the answer is</p> <p>22 yes.</p> <p>23 Q. Is there a particular type of asbestos that</p> <p>24 is primarily associated with ovarian cancer?</p> <p>25 MS. O'DELL: Objection. Asked and</p>	<p style="text-align: right;">Page 280</p> <p>1 A. Yes.</p> <p>2 Q. Are you familiar with the limitations of that</p> <p>3 research?</p> <p>4 MS. O'DELL: Objection. Vague.</p> <p>5 THE WITNESS: I'm not quite sure --</p> <p>6 BY MR. ZELLERS:</p> <p>7 Q. I'm sorry. Did you finish?</p> <p>8 A. Yes.</p> <p>9 Q. One of the papers you looked at -- and</p> <p>10 I think it's contained in one of your folders -- was</p> <p>11 the Reid 2011 paper. Is that right?</p> <p>12 A. Yes.</p> <p>13 Q. That was research on the potential</p> <p>14 relationship between asbestos and ovarian cancer. One</p> <p>15 of the limitations as discussed by Reid is that</p> <p>16 there's a very small number of cases.</p> <p>17 Is that right?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: I believe so.</p> <p>20 BY MR. ZELLERS:</p> <p>21 Q. Is it true that most, if not all, of the</p> <p>22 studies that you have reviewed with respect to</p> <p>23 asbestos and ovarian cancer involve occupational</p> <p>24 exposure?</p> <p>25 MS. O'DELL: Object to the form.</p>
<p style="text-align: right;">Page 279</p> <p>1 answered.</p> <p>2 THE WITNESS: Not that I'm aware of.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. What dose of asbestos is associated with</p> <p>5 ovarian cancer?</p> <p>6 A. We don't know. Possibly any dose.</p> <p>7 Q. What type of ovarian cancer is asbestos</p> <p>8 associated with?</p> <p>9 I guess that goes back to the answer before.</p> <p>10 You don't know. Is that right?</p> <p>11 MS. O'DELL: Objection to form. That's</p> <p>12 not what he said.</p> <p>13 THE WITNESS: It's associated with</p> <p>14 epithelial ovarian cancer.</p> <p>15 BY MR. ZELLERS:</p> <p>16 Q. Does the type of ovarian cancer vary based on</p> <p>17 the type of asbestos?</p> <p>18 MS. O'DELL: Objection. Asked and</p> <p>19 answered.</p> <p>20 THE WITNESS: I don't think anybody</p> <p>21 knows that.</p> <p>22 BY MR. ZELLERS:</p> <p>23 Q. You've looked at studies that have explored</p> <p>24 the potential link between asbestos and ovarian</p> <p>25 cancer; is that right?</p>	<p style="text-align: right;">Page 281</p> <p>1 THE WITNESS: That's correct.</p> <p>2 BY MR. ZELLERS:</p> <p>3 Q. Did any of the nonoccupational asbestos</p> <p>4 studies reach statistical significance?</p> <p>5 A. No.</p> <p>6 Q. Do you know how many women have been studied</p> <p>7 in nonoccupational settings?</p> <p>8 A. In this particular study, it looks like</p> <p>9 Italian wives of asbestos factory workers would be in</p> <p>10 nonindustrial settings is 1780 women.</p> <p>11 Q. Are you aware of the difficulties that have</p> <p>12 existed over time in distinguishing between peritoneal</p> <p>13 mesothelioma and ovarian cancer?</p> <p>14 A. I'm aware that there are some uncertainty in</p> <p>15 some pathologic diagnoses, yes.</p> <p>16 Q. Those difficulties potentially affect the</p> <p>17 reliability of the studies; is that right?</p> <p>18 A. Well, I think both epithelial ovarian cancer</p> <p>19 and mesothelioma of the ovary or peritoneum are both</p> <p>20 malignancy.</p> <p>21 Q. Well, the studies have acknowledged that it's</p> <p>22 difficult to distinguish between the two, between</p> <p>23 peritoneal mesothelioma and ovarian cancer; is that</p> <p>24 right?</p> <p>25 A. Pathologically, that's correct.</p>

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<p>1 Q. And the Reid study, again, makes that</p> <p>2 finding. On the first page, in the right-hand column,</p> <p>3 Number 2, "Difficulties with Diagnosis"; is that</p> <p>4 right?</p> <p>5 A. Yes.</p> <p>6 Q. Have the studies addressed confounding and</p> <p>7 independent risk factors?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: Well, I'm certain that --</p> <p>10 I would be quite confident that they didn't evaluate</p> <p>11 these women, whether they had a BRCA1 or 2 mutation or</p> <p>12 not, and other risk factors were not included.</p> <p>13 BY MR. ZELLERS:</p> <p>14 Q. Well, Camargo 2011. That's another study</p> <p>15 that you put in one of your folders in preparation for</p> <p>16 today; is that right?</p> <p>17 A. Yeah.</p> <p>18 Q. That study acknowledged an inability to</p> <p>19 account for nonoccupational risk factors for ovarian</p> <p>20 cancer other than age; is that right?</p> <p>21 A. Yes.</p> <p>22 Q. These researchers conducted a meta-analysis</p> <p>23 to evaluate the association between asbestos and</p> <p>24 ovarian cancer; is that right?</p> <p>25 A. Yes.</p>	<p>1 your point about confounding issues, the risk factors</p> <p>2 in the 1970s above and beyond exposure to talc were</p> <p>3 not always controlled for. I think we know more about</p> <p>4 that today in ongoing studies.</p> <p>5 BY MR. ZELLERS:</p> <p>6 Q. You'd agree that exposure to asbestos through</p> <p>7 the perineal cosmetic talc use, assuming that talc</p> <p>8 contains asbestos fibers, is different from the heavy</p> <p>9 occupational exposure that's primarily been</p> <p>10 researched; is that right?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: Yes, I would agree with</p> <p>13 that.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Is the asbestos that women are exposed to</p> <p>16 from using cosmetic talc qualitatively the same as the</p> <p>17 raw asbestos encountered at a factory, if you know?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: The raw asbestos</p> <p>20 encountered at a factory before it's processed?</p> <p>21 BY MR. ZELLERS:</p> <p>22 Q. Yes.</p> <p>23 A. I don't know the answer to that.</p> <p>24 Q. Do you know what a cleavage fragment is?</p> <p>25 A. It's part of platy talc.</p>
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<p>1 Q. And they acknowledge, as we spoke just a</p> <p>2 moment ago, that they could not account for</p> <p>3 nonoccupational risk factors for ovarian cancer other</p> <p>4 than age; is that right?</p> <p>5 A. I believe so.</p> <p>6 Q. Also looking at Camargo, wouldn't you expect</p> <p>7 to find higher rates of other cancers in women using</p> <p>8 talc, like mesothelioma, if they are being exposed to</p> <p>9 substantial amounts of asbestos?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: They would be -- they</p> <p>12 would have to inhale it to a quantity enough to cause</p> <p>13 mesothelioma of the lung.</p> <p>14 BY MR. ZELLERS:</p> <p>15 Q. Are women who use talc in the perineal region</p> <p>16 at greater risk of mesothelioma?</p> <p>17 A. Not that I'm aware of.</p> <p>18 Q. Are women who use talc in the perineal region</p> <p>19 at greater risk of asbestosis?</p> <p>20 A. Not that I'm aware of.</p> <p>21 Q. If there was more asbestos in talcum powders</p> <p>22 in the 1970s, shouldn't we have seen higher rates of</p> <p>23 ovarian cancer in the earlier studies?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: I think getting back to</p>	<p>1 Q. Do you know how a cleavage fragment differs</p> <p>2 from an asbestos fiber?</p> <p>3 A. It has to do with the size of the fiber.</p> <p>4 Q. Do you have any opinions about cleavage</p> <p>5 fragments in this case?</p> <p>6 A. What case are we talking about?</p> <p>7 Q. You serving as an expert witness in the --</p> <p>8 A. I guess I think of a case as a patient.</p> <p>9 Q. Well, you're here today talking generally</p> <p>10 about the risk of ovarian cancer from talcum powder</p> <p>11 use; is that right?</p> <p>12 A. Yes.</p> <p>13 Q. Do you intend to express any expert opinions</p> <p>14 in this matter about cleavage fragments?</p> <p>15 MS. O'DELL: Objection to form.</p> <p>16 THE WITNESS: If asked.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. Okay. What opinions do you have about</p> <p>19 cleavage fragments? And, specifically, how does a</p> <p>20 cleavage fragment differ from an asbestos fiber?</p> <p>21 A. So it has to do with the ratio of length to</p> <p>22 width, and a cleavage factor has a less than 6:1</p> <p>23 proportion.</p> <p>24 Q. Anything else?</p> <p>25 A. You were asking about cleavage fragments?</p>

<p style="text-align: right;">Page 286</p> <p>1 Q. Yes. And I'm asking how it differs from an 2 asbestos fiber -- 3 A. Asbestos needle is longer. It's either a 4 ratio of 6:1 up to less than 15:1. 5 Q. Anything else? 6 A. And then fibers are considered greater than 7 15:1 ratio. 8 Q. Asbestos fibers or cleavage fragments? 9 A. Asbestos fibers. 10 Q. How does a cleavage fragment differ from 11 fibrous talc? 12 A. I'm not sure I know the difference. 13 Q. Does it make a difference to your theory and 14 your opinions if it turns out that talc contains 15 cleavage fragments of nonasbestiform amphiboles 16 instead of asbestiform amphiboles? 17 MS. O'DELL: Objection. 18 THE WITNESS: I'm going to have to read 19 your question. 20 BY MR. ZELLERS: 21 Q. Sure. And if you don't have opinions, that's 22 okay. I'm just trying to find out what you have 23 opinions about. 24 A. No, I don't have an opinion. 25 Q. You don't have opinions about whether or not</p>	<p style="text-align: right;">Page 288</p> <p>1 in front of me, though. 2 BY MR. ZELLERS: 3 Q. You're not expressing opinions in this case 4 on fragrance chemicals and heavy metals and any 5 association fragrance chemicals and heavy metals may 6 have on ovarian cancer; correct? 7 MS. O'DELL: Objection. Form. 8 THE WITNESS: No. I am expressing an 9 opinion about that. 10 BY MR. ZELLERS: 11 Q. What research have you done with respect to 12 the fragrance chemical and trace amounts of heavy 13 metals that are contained in the talcum powder? 14 MS. O'DELL: Objection to the form. 15 Compound. 16 THE WITNESS: It's my opinion that 17 talcum powder causes ovarian cancer, that talcum 18 powder contains platy talc, fibrous talc, asbestos, 19 heavy metals -- three of them -- and fragrances. 20 I'm not necessarily saying one of that list 21 is causing the cancer. It's the talcum powder -- the 22 baby talc -- baby powder and the Shower to Shower -- 23 that's causing the ovarian cancer. 24 BY MR. ZELLERS: 25 Q. I understand that, and I think I've asked you</p>
<p style="text-align: right;">Page 287</p> <p>1 regulatory action in this area rejects the idea that 2 science has established that cleavage fragments or 3 nonasbestiform amphiboles pose the same risk as 4 asbestos; correct? You leave that to other experts to 5 address? 6 A. The regulatory portion, yes. 7 Q. How, if at all, did you factor the difference 8 between asbestiform and nonasbestiform minerals into 9 your analysis of the relationship between talcum 10 powder use and ovarian cancer? 11 MS. O'DELL: Objection to the form. 12 Compound. 13 You may answer the question if you 14 understand it. 15 THE WITNESS: Well, I'm quite certain, 16 based on IARC, that asbestiform minerals are 17 carcinogenic. 18 BY MR. ZELLERS: 19 Q. That is your answer to my question? 20 A. Yes. 21 Q. All right. Fragrance chemicals and heavy 22 metals, you're aware those are addressed in 23 Dr. Crowley's report; is that right? 24 MS. O'DELL: Objection. Form. 25 THE WITNESS: Yes. I don't have that</p>	<p style="text-align: right;">Page 289</p> <p>1 my questions with respect to that. 2 What I'm asking about now is whether or not 3 you have made a separate analysis as to whether one or 4 more of the fragrance chemicals or one or more of the 5 trace heavy metals that have been reported to be 6 contained in talcum powder, whether those are causally 7 associated or a causal factor for ovarian cancer? 8 A. In combination with the commercial product 9 called baby powder and Shower to Shower, I think they 10 all contribute to the outcome, which is ovarian 11 cancer. 12 Q. Are you relying on any scientific literature 13 to support your opinion that some of the chemicals in 14 Johnson's baby powder cause ovarian cancer? 15 MS. O'DELL: Object to the form. 16 THE WITNESS: We know that they can be 17 carcinogenic. 18 BY MR. ZELLERS: 19 Q. With respect to ovarian cancer. 20 A. Not specifically to ovarian cancer. We 21 haven't studied that. 22 Q. Do you have any evidence that the fragrance 23 chemicals and trace heavy metals contained in 24 Johnson's baby powder have been tested in human beings 25 and found to cause inflammation?</p>

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<p>1 A. I'm not aware of those studies.</p> <p>2 Q. Is there any epidemiology, human studies,</p> <p>3 substantiating the theory that fragrance ingredients</p> <p>4 can cause ovarian cancer?</p> <p>5 A. Fragrance ingredients by themselves?</p> <p>6 Q. Yes.</p> <p>7 A. I'm not aware of any study that's evaluated</p> <p>8 that.</p> <p>9 Q. Is there any epidemiology study</p> <p>10 substantiating the theory that fibrous talc is</p> <p>11 carcinogenic?</p> <p>12 A. IARC claims it is carcinogenic.</p> <p>13 Q. That it causes ovarian cancer, specifically?</p> <p>14 A. I believe so.</p> <p>15 Q. You'd defer to IARC on that; is that right?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: Yes.</p> <p>18 BY MR. ZELLERS:</p> <p>19 Q. Is there any epidemiology substantiating the</p> <p>20 theory that exposures to trace amounts of heavy</p> <p>21 metals, allegedly, or that you believe are contained</p> <p>22 in the Johnson's baby powder can cause ovarian cancer?</p> <p>23 A. I'm not aware that anybody's done a</p> <p>24 randomized trial in human beings with carcinogen --</p> <p>25 carcinogenic heavy metals to evaluate whether ovarian</p>	<p>1 Q. Or Shower to Shower?</p> <p>2 A. No.</p> <p>3 Q. You've not done any independent testing of</p> <p>4 that; correct?</p> <p>5 A. That's correct.</p> <p>6 Q. How, if at all, did you factor the dose</p> <p>7 fragrances and heavy -- or trace heavy metals into</p> <p>8 your analysis of the potential relationship between</p> <p>9 those compounds and ovarian cancer?</p> <p>10 A. I didn't factor in.</p> <p>11 Q. Let me ask you a couple of questions about</p> <p>12 the Health Canada assessment and the Taher article.</p> <p>13 Those are new materials that you reviewed between the</p> <p>14 time of your report and appearing here today; is that</p> <p>15 right?</p> <p>16 A. That's correct.</p> <p>17 Q. Have you read the draft Health Canada risk</p> <p>18 assessment -- I'll provide you with a copy so we know</p> <p>19 what we're speaking of.</p> <p>20 (Exhibit No. 29 was marked for identification.)</p> <p>21 MR. ZELLERS: Deposition Exhibit 29 is</p> <p>22 the draft Health Canada decision framework -- strike</p> <p>23 that.</p> <p>24 Exhibit 29 is the Health Canada</p> <p>25 Decision-Making Framework for Identifying, Assessing,</p>
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<p>1 cancer or any other cancer might occur.</p> <p>2 Q. Well, aside from a randomized clinical trial,</p> <p>3 are you aware of any other epidemiology substantiating</p> <p>4 the theory that exposures to trace amounts of the</p> <p>5 heavy metals that are reported to be in the Johnson's</p> <p>6 baby powder can cause ovarian cancer?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: I don't think that</p> <p>9 anybody's ever studied that as a separate entity of</p> <p>10 metals only exposed to the ovary.</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. You have no evidence that the blood or tissue</p> <p>13 levels of any trace heavy metals are higher in genital</p> <p>14 talc users as compared to nonusers; is that right?</p> <p>15 A. That's correct.</p> <p>16 Q. Are your opinions in this case depending on</p> <p>17 talc containing carcinogenetic [sic] metals?</p> <p>18 A. Not necessarily.</p> <p>19 Q. Are your opinions in this case dependent on</p> <p>20 talc containing carcinogenetic [sic] fragrances?</p> <p>21 A. Not necessarily.</p> <p>22 Q. Do you have any opinions or knowledge as to</p> <p>23 the concentration of each of the fragrance chemicals</p> <p>24 that are contained in Johnson's baby powder?</p> <p>25 A. No.</p>	<p>1 and Managing Health Risks.</p> <p>2 Is that not what he's reviewed?</p> <p>3 MS. O'DELL: If you're handing him that</p> <p>4 and suggesting, that's not the health assessment that</p> <p>5 he's reviewed.</p> <p>6 MR. ZELLERS: So do we have the health</p> <p>7 assessment here? And, if not, we can just identify</p> <p>8 it. But I do want to ask him a few questions about</p> <p>9 the --</p> <p>10 MS. O'DELL: I do think we have it</p> <p>11 here. But, if you're going to ask him questions,</p> <p>12 I would put it in front of him. So, if we don't have</p> <p>13 a hard copy, I'm happy to put my electronic copy in</p> <p>14 front of him.</p> <p>15 MR. ZELLERS: Well, please put whatever</p> <p>16 you think you need to put in front of the witness so</p> <p>17 he can answer a couple of questions about the Health</p> <p>18 Canada risk assessment.</p> <p>19 MS. O'DELL: Sure. Give me just a</p> <p>20 moment --</p> <p>21 MR. ZELLERS: Sure.</p> <p>22 MS. O'DELL: -- because the copy I have</p> <p>23 is marked up, and I know you prefer for me not to hand</p> <p>24 him my marked-up copy.</p> <p>25 MR. ZELLERS: I would prefer that.</p>

<p style="text-align: right;">Page 294</p> <p>1 MS. O'DELL: Doctor, if you want 2 just use my computer, feel free to -- 3 THE WITNESS: Okay. I'm not real fast 4 at running through a computer, but -- 5 BY MR. ZELLERS: 6 Q. Hopefully, my questions will be pretty 7 high-level. 8 You have in front of you the draft Health 9 Canada risk assessment; is that right? 10 A. On my tablet, yes. 11 Q. Have you looked into what other public health 12 authorities have had to say about talc and ovarian 13 cancer? 14 A. Except for what the FDA has had to say. 15 Q. The answer is, no, other than with respect to 16 what the FDA has said; is that right? 17 A. The answer is no. 18 Q. Why would you rely on Health Canada but not 19 other public health organizations? 20 MS. O'DELL: Object to the form. 21 THE WITNESS: It's my understanding 22 that this is very recent analysis of the issues 23 regarding talcum powder and ovarian cancer and other 24 harms. 25</p>	<p style="text-align: right;">Page 296</p> <p>1 Canada? 2 A. I wasn't aware -- as I said, I wasn't aware 3 that there were comments that could be made. 4 Q. Outside of your litigation consulting work, 5 do you generally rely on draft assessments by 6 regulatory agencies? 7 MS. O'DELL: Object to the form. 8 THE WITNESS: I think it's something 9 that's worth looking at. It doesn't necessarily sway 10 my opinion, but could be useful additional information 11 that might be cutting edge. 12 BY MR. ZELLERS: 13 Q. You don't cite or -- strike that. 14 You do not rely on draft regulatory 15 assessments in your peer-reviewed publications and 16 studies; is that right? 17 MS. O'DELL: Object to the form. Asked 18 and answered. 19 THE WITNESS: Not usually, but don't 20 know what -- there's information there. If there's 21 information I can extract from a draft of something 22 that's useful, I can use it. 23 BY MR. ZELLERS: 24 Q. Are you familiar with the precautionary 25 principle?</p>
<p style="text-align: right;">Page 295</p> <p>1 BY MR. ZELLERS: 2 Q. You understand it's a draft assessment; is 3 that right? 4 A. That's correct. 5 Q. You understand that we're at the very 6 beginning of the public comment period; is that right? 7 MS. O'DELL: Object to the form. 8 THE WITNESS: I don't know that. 9 BY MR. ZELLERS: 10 Q. Are you aware that Health Canada can take up 11 to two years to take any action or no action at all? 12 MS. O'DELL: Object to the form. 13 THE WITNESS: I was not aware. 14 BY MR. ZELLERS: 15 Q. How did you come to learn of the Health 16 Canada risk assessment? 17 A. It was brought to my attention by counsel. 18 Q. By counsel for plaintiffs; is that right? 19 A. That's correct. 20 Q. Were you involved in the risk assessment 21 prior to its publication? 22 A. Was I involved? 23 Q. Yes. 24 A. No. 25 Q. Have you submitted any comments to Health</p>	<p style="text-align: right;">Page 297</p> <p>1 A. Slightly. 2 Q. Basically, that means taking a precautionary 3 approach to decision-making that emphasizes the need 4 to take timely preventative action even in the absence 5 of a full scientific demonstration of cause and 6 effect. 7 Does that sound right? 8 A. Sounds very reasonable, yeah. 9 Q. You understand that Health Canada may have 10 made recommendations that are purely precautionary; is 11 that right? 12 MS. O'DELL: Object to the form. 13 THE WITNESS: That's what I've read, 14 yes. 15 BY MR. ZELLERS: 16 Q. I can go through the document for it if need 17 be, but in the -- its publication -- I'll hand it to 18 you -- which we've marked as Exhibit 29, it is 19 captioned "Health Canada Decision-Making Framework for 20 Identifying, Assessing, and Managing Health Risks." 21 Do you have that in front of you? 22 A. You've handed it to me, yes. 23 Q. If you go to page 5, Health Canada sets out 24 the bases for its risk assessments; is that right? 25 A. Let me get to page 5 here.</p>

<p style="text-align: right;">Page 298</p> <p>1 Q. Sure.</p> <p>2 A. In the black box "Underlying Principles"?</p> <p>3 Q. Yes, "Underlying Principles."</p> <p>4 One of the underlying principles is "use a</p> <p>5 precautionary approach"; is that right?</p> <p>6 A. That's what it says.</p> <p>7 Q. If you go, then, to page 8, second paragraph,</p> <p>8 second sentence, where Health Canada sets forth "use</p> <p>9 of a precautionary approach," the second sentence</p> <p>10 reads (as read):</p> <p>11 "A precautionary approach to</p> <p>12 decision-making emphasizes the</p> <p>13 need to take timely and</p> <p>14 appropriately preventative action</p> <p>15 even in the absence of a full</p> <p>16 scientific demonstration of cause</p> <p>17 and effect."</p> <p>18 Did I read that correctly?</p> <p>19 A. Yes, sir.</p> <p>20 Q. So a recommendation by Health Canada does not</p> <p>21 require a finding of causation like is required in a</p> <p>22 court. Does that sound right based upon what we have</p> <p>23 reviewed here?</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 THE WITNESS: I'm not sure what the</p>	<p style="text-align: right;">Page 300</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. All right. Thayer 2018, that's a new and</p> <p>3 additional meta-analysis that you have reviewed?</p> <p>4 A. Yes.</p> <p>5 Q. Let's mark Thayer 2018 as Deposition</p> <p>6 Exhibit 30.</p> <p>7 (Exhibit No. 30 was marked for identification.)</p> <p>8 BY MR. ZELLERS:</p> <p>9 Q. And you can tell us if this is --</p> <p>10 A. I've got a copy.</p> <p>11 Q. Well, take, if you will, the court --</p> <p>12 deposition exhibit number. Just put it in your pile</p> <p>13 there so we can make sure we all understand what we're</p> <p>14 talking about.</p> <p>15 You have seen this review before; is that</p> <p>16 right?</p> <p>17 A. Yes, I have.</p> <p>18 Q. The Health Canada risk assessment that you</p> <p>19 looked at a few moments ago relies on this</p> <p>20 meta-analysis by Thayer and others; is that right?</p> <p>21 A. That's my understanding. They may use other</p> <p>22 information too.</p> <p>23 Q. Do you know whether or not Thayer 2018 has</p> <p>24 been peer-reviewed?</p> <p>25 A. I'm not aware of that.</p>
<p style="text-align: right;">Page 299</p> <p>1 requirements are for court. I understand the</p> <p>2 precautionary portion here.</p> <p>3 BY MR. ZELLERS:</p> <p>4 Q. And you also understand that, with the use of</p> <p>5 a precautionary approach, that action can be taken</p> <p>6 even in the absence of a full scientific demonstration</p> <p>7 of cause and effect?</p> <p>8 MS. O'DELL: Objection to form.</p> <p>9 THE WITNESS: What action are you</p> <p>10 talking about?</p> <p>11 BY MR. ZELLERS:</p> <p>12 Q. Well, decision-making, any sort of</p> <p>13 assessment.</p> <p>14 MS. O'DELL: Objection to form.</p> <p>15 THE WITNESS: I'm still not</p> <p>16 understanding.</p> <p>17 BY MR. ZELLERS:</p> <p>18 Q. Sure. Health Canada --</p> <p>19 A. Yes.</p> <p>20 Q. -- does not need, in terms of its risk</p> <p>21 assessment, to have a full scientific demonstration of</p> <p>22 cause and effect?</p> <p>23 A. I understand.</p> <p>24 MS. O'DELL: Objection to form.</p> <p>25</p>	<p style="text-align: right;">Page 301</p> <p>1 Q. Do you know if it has been submitted for</p> <p>2 publication?</p> <p>3 A. I do not know.</p> <p>4 Q. How can you rely on the Health Canada risk</p> <p>5 assessment without assessing the quality of one of the</p> <p>6 major studies on which they rely?</p> <p>7 MS. O'DELL: Objection to form.</p> <p>8 THE WITNESS: And the major study</p> <p>9 you're referring to is Thayer?</p> <p>10 BY MR. ZELLERS:</p> <p>11 Q. Yes.</p> <p>12 A. Let me read the first part of your question</p> <p>13 here.</p> <p>14 So I'm not saying that I rely on the Health</p> <p>15 Canada risk for my total opinion. It's another piece</p> <p>16 of evidence and information that's helpful in me</p> <p>17 coming to my opinion. And this only supports my</p> <p>18 opinion.</p> <p>19 Bradford Hill's breakdown is very similar to</p> <p>20 my opinion. I didn't see this before I created my</p> <p>21 opinion.</p> <p>22 Q. Do you know if Thayer 2018 employed a</p> <p>23 reliable methodology?</p> <p>24 A. I believe it's very similar to other</p> <p>25 methodology and systematic reviews and meta-analyses.</p>

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<p>1 Q. Did you have access to the appendices or</p> <p>2 supplemental tables referenced in the Thayer</p> <p>3 meta-analysis?</p> <p>4 A. I did not.</p> <p>5 Q. Do you know the source of funding for Thayer</p> <p>6 2018 meta-analysis?</p> <p>7 A. If it was listed on here, I should have</p> <p>8 picked it up. If not, then I don't know the answer to</p> <p>9 your question.</p> <p>10 Q. Do you know the credentials of the authors of</p> <p>11 Thayer 2018?</p> <p>12 A. None other than what are listed on the cover</p> <p>13 sheet of this paper.</p> <p>14 Q. Do you personally know any of the authors of</p> <p>15 Thayer 2018?</p> <p>16 A. No, sir.</p> <p>17 Q. Do you know whether or not any of those</p> <p>18 authors have conflicts of interest or potential</p> <p>19 conflicts of interest?</p> <p>20 A. Do not know.</p> <p>21 Q. In Thayer 2018, the authors concluded that</p> <p>22 "The evidence suggests that asbestos contamination</p> <p>23 does not explain the positive association between</p> <p>24 perineal use of talc powder and ovarian cancer."</p> <p>25 Is that right?</p>	<p>1 point?</p> <p>2 A. I do not disagree with the author on that</p> <p>3 point.</p> <p>4 Q. One of the Bradford Hill criteria that we've</p> <p>5 discussed is consistency; is that right?</p> <p>6 A. Yes.</p> <p>7 Q. Look at Thayer 2018. So Exhibit 30, page 25,</p> <p>8 Table 2.</p> <p>9 Do you have that?</p> <p>10 A. Yes.</p> <p>11 Q. Table 2 is entitled "Summary of Evidence for</p> <p>12 Each of the Hill Criteria of Causation as Applied to</p> <p>13 Perineal Application of Talc and Ovarian Cancer."</p> <p>14 Is that right?</p> <p>15 A. I'm sorry. What were you reading -- where</p> <p>16 were you reading from?</p> <p>17 Q. Sure. Table 2 on page 25 --</p> <p>18 A. Right.</p> <p>19 Q. -- is captioned "Summary of Evidence for Each</p> <p>20 of the Hill Criteria of Causation as Applied to</p> <p>21 Perineal Application of Talc and Ovarian Cancer."</p> <p>22 A. Yes.</p> <p>23 Q. And they kind of go through the same Bradford</p> <p>24 Hill factors that you do; is that right?</p> <p>25 A. Yes.</p>
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<p>1 MS. O'DELL: Mike, what page are you</p> <p>2 reading from?</p> <p>3 MR. ZELLERS: Page 41, last sentence.</p> <p>4 So we're on Deposition Exhibit 30, the Thayer</p> <p>5 meta-analysis, page 41, last part.</p> <p>6 MS. O'DELL: Thank you.</p> <p>7 BY MR. ZELLERS:</p> <p>8 Q. Doctor, I really just have a really simple</p> <p>9 question.</p> <p>10 A. Okay.</p> <p>11 Q. So the authors conclude -- or state that</p> <p>12 (as read):</p> <p>13 "The similarity of findings</p> <p>14 between studies published prior to</p> <p>15 and after this point suggest</p> <p>16 asbestos contamination does not</p> <p>17 explain the positive association</p> <p>18 between perineal use of talc</p> <p>19 powder and risk of ovarian</p> <p>20 cancer."</p> <p>21 Is that right?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 THE WITNESS: That's what they say.</p> <p>24 BY MR. ZELLERS:</p> <p>25 Q. Do you disagree with the authors on that</p>	<p>1 Q. Under "Consistency," they said that</p> <p>2 (as read):</p> <p>3 "15 out of 30 studies reported</p> <p>4 positive and significant</p> <p>5 associations."</p> <p>6 Is that right?</p> <p>7 A. That's right.</p> <p>8 Q. We're back to, similar with Langseth, half</p> <p>9 the studies showing significant associations and half</p> <p>10 the studies don't. Thayer reports that same findings</p> <p>11 here; is that right?</p> <p>12 A. Yes, but not all studies have the same</p> <p>13 weight.</p> <p>14 Q. And we've discussed that before; is that</p> <p>15 right?</p> <p>16 A. Yes. I just wanted to bring it up again,</p> <p>17 since we're talking about that topic.</p> <p>18 Q. Let's go to "no dose response." And that was</p> <p>19 your -- well, let me withdraw that statement.</p> <p>20 Go to page 21, if you will, second</p> <p>21 paragraph, last few sentences.</p> <p>22 Do you have that?</p> <p>23 MS. O'DELL: What page are you on?</p> <p>24 MR. ZELLERS: Page 21.</p> <p>25</p>

<p style="text-align: right;">Page 306</p> <p>1 BY MR. ZELLERS:</p> <p>2 Q. The authors here in this section are</p> <p>3 discussing whether or not there is a dose response and</p> <p>4 dose response findings in the studies; is that right?</p> <p>5 A. Yes.</p> <p>6 Q. They conclude at the very end -- and I'm</p> <p>7 looking on page 21, the last sentence above 3.3.2</p> <p>8 (as read):</p> <p>9 "When conducted, findings from</p> <p>10 trend analyses were not</p> <p>11 consistent."</p> <p>12 Do you see that?</p> <p>13 A. Yes, I do.</p> <p>14 Q. The authors recognize that there's no</p> <p>15 consistent dose response across studies, and you agree</p> <p>16 with that; is that right?</p> <p>17 MS. O'DELL: Objection to form.</p> <p>18 THE WITNESS: I think there's some</p> <p>19 evidence there's dose response. Some studies don't do</p> <p>20 enough to evaluate for dose response, especially the</p> <p>21 cohort studies that are pretty well destroyed back on</p> <p>22 page 43.</p> <p>23 BY MR. ZELLERS:</p> <p>24 Q. Some studies find dose response and some</p> <p>25 studies don't; correct?</p>	<p style="text-align: right;">Page 308</p> <p>1 THE VIDEOGRAPHER: Going off the record</p> <p>2 at 4:36 p.m.</p> <p>3 (Recess taken from 4:36 p.m. to 4:44 p.m.)</p> <p>4 THE VIDEOGRAPHER: Back on the record</p> <p>5 at 4:44 p.m.</p> <p>6 CROSS-EXAMINATION BY COUNSEL FOR THE DEFENDANT IMERYS</p> <p>7 BY MS. BOCKUS:</p> <p>8 Q. Doctor, I just want to be sure that what we</p> <p>9 have marked so far will provide us with copies of all</p> <p>10 of your handwritten notes.</p> <p>11 A. Certainly.</p> <p>12 Q. Okay. Are there some handwritten notes that</p> <p>13 are not on the table in front of you right now?</p> <p>14 A. Yeah. There's some in these files and</p> <p>15 some -- like this, with sticky notes.</p> <p>16 Q. And that's what I'm looking for. I want to</p> <p>17 make sure I get all your sticky notes and all of the</p> <p>18 notations that you have made in your review of the</p> <p>19 articles.</p> <p>20 And so when we get -- it looks like there</p> <p>21 are two binders that have flags and that sort of thing</p> <p>22 in them. Are there notes in the binders that are over</p> <p>23 on the table?</p> <p>24 A. No, ma'am.</p> <p>25 Q. Okay. So other than the binders and the</p>
<p style="text-align: right;">Page 307</p> <p>1 MS. O'DELL: Objection to form.</p> <p>2 THE WITNESS: That's correct.</p> <p>3 BY MR. ZELLERS</p> <p>4 Q. And that's true of case-control studies; is</p> <p>5 that right?</p> <p>6 A. Yes.</p> <p>7 Q. I want to go back to a question I had asked</p> <p>8 you earlier.</p> <p>9 When you do surgery and you see</p> <p>10 inflammation, would you agree that inflammation that</p> <p>11 you see is likely related to the cancer itself?</p> <p>12 A. So let me clarify so we don't get confused.</p> <p>13 The inflammation that I see is purely</p> <p>14 ascites. The rest -- which is fluid in the abdomen</p> <p>15 either caused by the cancer or by inflammation.</p> <p>16 Q. The ascites can be caused by the cancer</p> <p>17 itself; correct?</p> <p>18 A. Yes.</p> <p>19 MR. ZELLERS: I have no further</p> <p>20 questions. Some of my colleagues may have questions</p> <p>21 for you. Thank you for your time.</p> <p>22 THE WITNESS: Thank you.</p> <p>23 MS. BOCKUS: Could we take a quick</p> <p>24 break so that we can change places?</p> <p>25 MS. O'DELL: Sure.</p>	<p style="text-align: right;">Page 309</p> <p>1 materials that are on the table, do you have</p> <p>2 handwritten notes somewhere else?</p> <p>3 A. No.</p> <p>4 Q. Earlier today, you were asked a question --</p> <p>5 I think it was about the FDA letter -- and you thought</p> <p>6 you had some handwritten notes on that. Do you know</p> <p>7 where those might be?</p> <p>8 A. I don't recall now. You know, it was a</p> <p>9 sticky note. Just what I've been trying to do is</p> <p>10 abstract these papers to a few facts that I think are</p> <p>11 important. It's not personal opinions or other things</p> <p>12 like that; it's just trying to move the conversation</p> <p>13 along.</p> <p>14 Q. Would you agree that in general ovarian</p> <p>15 cancer is a disease of aging?</p> <p>16 MS. O'DELL: Objection to form.</p> <p>17 THE WITNESS: That is one of the risk</p> <p>18 factors, yes.</p> <p>19 BY MS. BOCKUS:</p> <p>20 Q. That very few women are diagnosed with</p> <p>21 ovarian cancer who are under 30 years of age; correct?</p> <p>22 A. With epithelial ovarian cancer, yes.</p> <p>23 Q. And that risk -- so the numbers are different</p> <p>24 depending which type of ovarian cancer you're talking</p> <p>25 about; correct?</p>

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<p>1 A. Yes.</p> <p>2 Q. So confining it to epithelial ovarian cancer,</p> <p>3 that risk starts to rise in the 30s and rises even</p> <p>4 more in the 40s, 50s, and 60s; correct?</p> <p>5 A. Yes, that's my understanding.</p> <p>6 Q. And in the 60s, it kind of levels off --</p> <p>7 A. In the 60s or 70s. I've forgotten what the</p> <p>8 curves look like exactly.</p> <p>9 Q. And other than being female of a certain age,</p> <p>10 most patients who you see, you don't have any idea of</p> <p>11 what caused their ovarian cancer; correct?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: Again, I get back to my</p> <p>14 theme about gene mutation. Something caused the gene</p> <p>15 mutation to cause that normal cell that's mutated now</p> <p>16 to become malignant.</p> <p>17 BY MS. BOCKUS:</p> <p>18 Q. Exactly. Somewhere along the aging process,</p> <p>19 perhaps, or through some exposure, there's been a gene</p> <p>20 mutation and -- well, let me stop there. Scratch all</p> <p>21 that.</p> <p>22 It actually takes multiple gene mutations</p> <p>23 for a cancer to begin, does it not?</p> <p>24 A. That's our understanding.</p> <p>25 Q. Our understanding is that several things</p>	<p>1 tell them what caused the genetic mutation that caused</p> <p>2 their cancer?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: Aside from the inherited</p> <p>5 BRCA mutations and Lynch syndrome, in general, no, we</p> <p>6 can't.</p> <p>7 BY MS. BOCKUS:</p> <p>8 Q. Would you agree that what we know today about</p> <p>9 what causes ovarian cancer is actually dwarfed by what</p> <p>10 we don't yet know about the cause of ovarian cancer?</p> <p>11 MS. O'DELL: Object to form.</p> <p>12 THE WITNESS: I think it's fair to say</p> <p>13 we know some risk factors.</p> <p>14 BY MS. BOCKUS:</p> <p>15 Q. But we're learning new risk factors and new</p> <p>16 genetic mutations all the time; correct?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: In general, we're moving</p> <p>19 along those lines in research.</p> <p>20 BY MS. BOCKUS:</p> <p>21 Q. I just want to be clear. Is it your position</p> <p>22 that being powdered as an infant with talc increases</p> <p>23 that person's risk of being diagnosed with ovarian</p> <p>24 cancer as a woman?</p> <p>25 A. I think it's the sustained exposure more than</p>
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<p>1 happen -- have to happen before a cancer cell is</p> <p>2 formed; correct?</p> <p>3 A. That's our usual understanding of what the</p> <p>4 onset of cancer is.</p> <p>5 Q. And our general understanding is that it</p> <p>6 takes decades for that to happen, generally speaking;</p> <p>7 correct?</p> <p>8 A. It depends upon what the mutations are. A</p> <p>9 woman that's born with a genetic mutation of BRCA1,</p> <p>10 for example, already has some mutations. So that's</p> <p>11 why we believe they develop ovarian cancer at an</p> <p>12 earlier age. Just a couple more mutations, and then</p> <p>13 the ovarian cancer starts.</p> <p>14 Whereas a woman that doesn't have a BRCA1</p> <p>15 mutation, as she gets older, she obtains or gets</p> <p>16 mutations over time. And the longer you live, the</p> <p>17 more likely you are to have those mutations to become</p> <p>18 ovarian cancer.</p> <p>19 Q. And one of the things that happens over time</p> <p>20 is our body's ability to fight off detected mutations</p> <p>21 decreases; correct?</p> <p>22 A. Yes, in general.</p> <p>23 Q. So back to my prior question, when patients</p> <p>24 come to you who have ovarian cancer, other than being</p> <p>25 female and over a certain age, are you ever able to</p>	<p>1 if an infant was just -- received talcum powder and</p> <p>2 then never continued to use it into her 20s, 30s, 40s,</p> <p>3 and 50s, my opinion would be that infant is not at</p> <p>4 particularly high risk.</p> <p>5 Q. Is it your opinion that powdering one's baby</p> <p>6 with talcum powder increases the mother's risk of</p> <p>7 ovarian cancer?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: So just -- just through</p> <p>10 inhaled? I believe that there's not enough evidence</p> <p>11 to say that.</p> <p>12 BY MS. BOCKUS:</p> <p>13 Q. Okay. And so fair to say that you're truly</p> <p>14 confining your opinion to the theory that talc can</p> <p>15 travel from the perineum to the ovary and cause</p> <p>16 ovarian cancer that way; is that correct?</p> <p>17 A. And cause --</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 Excuse me.</p> <p>20 THE WITNESS: -- cause chronic</p> <p>21 irritation and inflammation, yes.</p> <p>22 BY MS. BOCKUS:</p> <p>23 Q. In order for a cancer to be called a cancer,</p> <p>24 it has to evolve in such a way that it has limitless</p> <p>25 replicative potential; correct?</p>

<p style="text-align: right;">Page 314</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I think cancers -- if</p> <p>3 I understand what you're saying, some cancers also</p> <p>4 replicate rapidly and then slow down and may be</p> <p>5 indolent for a period of time.</p> <p>6 So the timeline of onset of cancer to death,</p> <p>7 which is, I guess, the timeline, can vary from one</p> <p>8 patient to another.</p> <p>9 BY MS. BOCKUS:</p> <p>10 Q. Cancer needs to develop the ability to evade</p> <p>11 apoptosis; correct?</p> <p>12 A. I'm sorry?</p> <p>13 Q. Evade apoptosis.</p> <p>14 A. Yeah, that's sort of -- by definition, cancer</p> <p>15 has already evaded apoptosis.</p> <p>16 Q. Exactly.</p> <p>17 Cancer also needs to develop sustained</p> <p>18 angiogenesis; correct?</p> <p>19 A. It needs to derive a blood supply, and</p> <p>20 angiogenesis is the blood supply.</p> <p>21 Q. It needs the ability to invade other tissue</p> <p>22 and metastasize; correct?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 THE WITNESS: I'm not sure it needs to.</p> <p>25 I mean, in general, the time course is one of invasion</p>	<p style="text-align: right;">Page 316</p> <p>1 A. It might be.</p> <p>2 Q. Is chronic inflammation associated -- well,</p> <p>3 let me back up.</p> <p>4 You testified earlier that you would not</p> <p>5 expect to see signs of chronic inflammation at the</p> <p>6 time you operate on a woman with ovarian cancer; is</p> <p>7 that correct?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: Yes, that's true.</p> <p>10 BY MS. BOCKUS:</p> <p>11 Q. Why would you no longer see the signs of</p> <p>12 chronic inflammation at the time of her surgery for</p> <p>13 ovarian cancer?</p> <p>14 A. One, I'm not sure we know the signs that a</p> <p>15 surgeon would identify as chronic inflammation to my</p> <p>16 naked eye or to my field.</p> <p>17 Two, most of the time in women with ovarian</p> <p>18 cancer, three-quarters of the women I take care of</p> <p>19 have cancer spread throughout their abdomen and</p> <p>20 pelvis, with cancer everywhere, so that -- I mean, we</p> <p>21 don't -- I don't know how to identify chronic</p> <p>22 inflammation. I suggested that ascites has something</p> <p>23 to do with inflammation but not always.</p> <p>24 Q. And the ascites could come from the cancer</p> <p>25 itself; correct?</p>
<p style="text-align: right;">Page 315</p> <p>1 or metastasis or both.</p> <p>2 BY MS. BOCKUS:</p> <p>3 Q. Okay. Which of those steps do you believe</p> <p>4 talc contributes to?</p> <p>5 MS. O'DELL: Objection to form.</p> <p>6 THE WITNESS: I believe talc</p> <p>7 contributes to the first onset -- or the additional or</p> <p>8 first onset of mutations that then lead on to cancer.</p> <p>9 BY MS. BOCKUS:</p> <p>10 Q. What -- in what gene does the mutation occur</p> <p>11 in that talc impacts?</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: Some genes -- SNPs that</p> <p>14 Dr. Saed has identified are what we know, I think, to</p> <p>15 date. We know there's other genetic mutations that</p> <p>16 are present in the somatic form of ovarian cancer as</p> <p>17 well as the inherited genes.</p> <p>18 But I don't think anybody has studied that</p> <p>19 in correlation with talc exposure, so that would be an</p> <p>20 interesting investigation to undertake.</p> <p>21 BY MS. BOCKUS:</p> <p>22 Q. Inflammation -- chronic inflammation, is that</p> <p>23 associated with pain?</p> <p>24 A. With pain?</p> <p>25 Q. Yes.</p>	<p style="text-align: right;">Page 317</p> <p>1 A. Yes.</p> <p>2 Q. What would signs of chronic inflammation in</p> <p>3 the fallopian tubes be?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 THE WITNESS: I don't think there's any</p> <p>6 signs that I'm aware of that recognize -- or would be</p> <p>7 identified as chronic inflammation.</p> <p>8 BY MS. BOCKUS:</p> <p>9 Q. Is chronic inflammation something that could</p> <p>10 be identified by a pathologist?</p> <p>11 A. It might be.</p> <p>12 Q. Do you know whether there have been any</p> <p>13 studies looking at -- looking for signs of chronic</p> <p>14 inflammation in women whose fallopian tubes have been</p> <p>15 removed as part of any of the studies that you cite?</p> <p>16 MS. O'DELL: Object to the form.</p> <p>17 THE WITNESS: I'm sorry. They've had</p> <p>18 their fallopian tubes removed?</p> <p>19 BY MS. BOCKUS:</p> <p>20 Q. And looked at by a pathologist, yes. And</p> <p>21 it's reported in the studies.</p> <p>22 A. Signs of chronic inflammation of the</p> <p>23 fallopian tube? I'm not aware of that, no.</p> <p>24 Q. Okay. Would you expect a woman who is using</p> <p>25 talcum powder regularly to have signs of inflammation</p>

<p style="text-align: right;">Page 318</p> <p>1 in her fallopian tubes?</p> <p>2 MS. O'DELL: Objection. Form.</p> <p>3 THE WITNESS: Again, the signs of</p> <p>4 chronic inflammation are vague and not well defined in</p> <p>5 terms of what a pathologist would see. If they did</p> <p>6 molecular testing -- for example, the reason we now</p> <p>7 believe that most ovarian cancers arise in the</p> <p>8 fallopian tube is by doing molecular testing of the</p> <p>9 fallopian tube and seeing p53 mutations and early</p> <p>10 cancers arising from the fallopian tube that then</p> <p>11 metastasize to the ovary in the peritoneal cavity. So</p> <p>12 that's a molecular biology approach that pathologists</p> <p>13 don't usually do unless it's in a research setting.</p> <p>14 BY MS. BOCKUS:</p> <p>15 Q. Is it your belief that pathologists cannot</p> <p>16 identify chronic inflammation in tissue samples that</p> <p>17 they examine?</p> <p>18 MS. O'DELL: Objection. Form.</p> <p>19 THE WITNESS: I think they can identify</p> <p>20 it on some occasions on H&E slides. Is that what</p> <p>21 you're talking about?</p> <p>22 BY MS. BOCKUS:</p> <p>23 Q. Yes.</p> <p>24 A. I think they can see it sometimes.</p> <p>25 Q. And do you know if chronic inflammation is</p>	<p style="text-align: right;">Page 320</p> <p>1 THE WITNESS: I'm not sure how much</p> <p>2 greater. It's greater as women age.</p> <p>3 BY MS. BOCKUS:</p> <p>4 Q. You indicated that not using birth control</p> <p>5 pills causes ovarian cancer.</p> <p>6 Did I understand you correctly?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 THE WITNESS: It allows, more likely</p> <p>9 than not, more mutations to occur as the patient</p> <p>10 ovulates rather than having ovulation suppression by</p> <p>11 birth control pills.</p> <p>12 BY MS. BOCKUS:</p> <p>13 Q. Okay. Do you believe that that mechanism is</p> <p>14 supported in light of the fact that it is now believed</p> <p>15 that cancers originate in the fallopian tubes?</p> <p>16 A. Yes, I think it's hormonal changes in the</p> <p>17 fallopian tubes as well as the ovary.</p> <p>18 Q. Okay. Do you know to what -- what are the</p> <p>19 odds ratios for a woman developing ovarian cancer who</p> <p>20 has never used birth control pills compared to women</p> <p>21 who have?</p> <p>22 A. There's one statistic, I think, that is</p> <p>23 pretty well agreed upon is that women who used birth</p> <p>24 control pills for five years have about a 50 percent</p> <p>25 reduction in the lifetime risk of ovarian cancer.</p>
<p style="text-align: right;">Page 319</p> <p>1 reported as existing in the fallopian tubes in any of</p> <p>2 the studies that you have cited in your report?</p> <p>3 MS. O'DELL: Objection. Asked and</p> <p>4 answered.</p> <p>5 THE WITNESS: Not that I'm aware of,</p> <p>6 no.</p> <p>7 BY MS. BOCKUS:</p> <p>8 Q. I'm going to be jumping around a lot, and I'm</p> <p>9 just going to apologize in advance for that --</p> <p>10 A. Okay.</p> <p>11 Q. -- but so much of what I was going to ask you</p> <p>12 has already been covered.</p> <p>13 Did I understand you correctly to say that</p> <p>14 it is your belief that age causes ovarian cancer?</p> <p>15 A. Age causes ovarian cancer?</p> <p>16 Q. Yes.</p> <p>17 A. Age allows time for mutations to occur; and,</p> <p>18 therefore, ovarian cancer comes from that.</p> <p>19 Q. Do you know what the relative risk of ovarian</p> <p>20 cancer is for a woman in her 60s compared to a woman</p> <p>21 in her 30s?</p> <p>22 A. I'd have to look at some statistical tables.</p> <p>23 I'm sure it's available.</p> <p>24 Q. But it's greater than three or four; correct?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 321</p> <p>1 Q. In your report on page 4, at the bottom, you</p> <p>2 talk about EOC risk factors.</p> <p>3 Can you see where I'm talking about?</p> <p>4 A. Yes, ma'am.</p> <p>5 Q. And you say (as read):</p> <p>6 "The lifetime risk of developing</p> <p>7 ovarian cancer is 39 to 46 percent</p> <p>8 in BRCA1 carriers."</p> <p>9 Did I read that correctly?</p> <p>10 A. Yes.</p> <p>11 Q. So does that come out to 390 to 460 women per</p> <p>12 thousand who carry the BRCA1 gene mutation will</p> <p>13 develop ovarian cancer in their lifetime?</p> <p>14 MS. O'DELL: Objection to form.</p> <p>15 THE WITNESS: Give me a second to do</p> <p>16 the math. So if we had a thousand women, in their</p> <p>17 lifetime, 390 would develop ovarian cancer.</p> <p>18 BY MS. BOCKUS:</p> <p>19 Q. Okay. Somewhere between 390 and 460?</p> <p>20 A. Yes. I just did the math for one, but yes.</p> <p>21 Q. Okay. And then going on, women who carry the</p> <p>22 BRCA2 mutation, it would be 110 to 270 out of 1,000 in</p> <p>23 their lifetime would develop ovarian cancer; is that</p> <p>24 correct?</p> <p>25 A. Yes.</p>

<p style="text-align: right;">Page 322</p> <p>1 MS. O'DELL: For women with BRCA2?</p> <p>2 MS. BOCKUS: Yes. For women with</p> <p>3 BRCA2. I thought I made that qualification.</p> <p>4 BY MS. BOCKUS:</p> <p>5 Q. And then you say (as read):</p> <p>6 "This is compared to the</p> <p>7 1.3 percent lifetime risk in</p> <p>8 noncarriers."</p> <p>9 Correct?</p> <p>10 A. That's correct.</p> <p>11 Q. So in other words, 13 women out of 1,000,</p> <p>12 approximately, in the US will develop ovarian cancer</p> <p>13 in their lifetime?</p> <p>14 MS. O'DELL: Objection to form.</p> <p>15 BY MS. BOCKUS:</p> <p>16 Q. Is that what that means?</p> <p>17 A. Yes.</p> <p>18 MS. O'DELL: Objection to form.</p> <p>19 BY MS. BOCKUS:</p> <p>20 Q. And it's your opinion that -- and that's</p> <p>21 all-comers; right? That's women who have had</p> <p>22 children, women who haven't had children, et cetera?</p> <p>23 A. Yes.</p> <p>24 Q. That's the entire population?</p> <p>25 A. But that don't have these BRCA mutations.</p>	<p style="text-align: right;">Page 324</p> <p>1 THE WITNESS: Being on the planet is</p> <p>2 the 1.3 percent, or the 13 out of 1,000.</p> <p>3 BY MS. BOCKUS:</p> <p>4 Q. Correct.</p> <p>5 A. Being exposed to talc adds the other 4, if</p> <p>6 your math is right --</p> <p>7 Q. Okay. But do you know of any way that you or</p> <p>8 anyone else can say, in this group of 17 women who</p> <p>9 have ovarian cancer who used talcum powder, it's these</p> <p>10 4 who developed it because of their talcum powder use</p> <p>11 versus the 13 that we know would have been diagnosed</p> <p>12 with ovarian cancer whether they ever used talc or</p> <p>13 not?</p> <p>14 MS. O'DELL: Objection. Incomplete</p> <p>15 hypothetical.</p> <p>16 THE WITNESS: So this is a hypothetical</p> <p>17 that 1,000 women used talcum powder, and we knew, if</p> <p>18 they hadn't used talcum powder, that 1 point -- that</p> <p>19 13 of them would develop it, and then the other 4</p> <p>20 develop it because, in my opinion, they used talcum</p> <p>21 powder?</p> <p>22 BY MS. BOCKUS:</p> <p>23 Q. Right, because that's the difference between</p> <p>24 the background rate and the rate that, it's your</p> <p>25 opinion, is associated with talc use; correct?</p>
<p style="text-align: right;">Page 323</p> <p>1 Q. Correct. Fair enough.</p> <p>2 So, as I understand it, it is your opinion</p> <p>3 that the use of body powders, talcum body powders,</p> <p>4 increases a woman's risk by about 30 percent. Is that</p> <p>5 correct?</p> <p>6 A. That's what the epidemiology says, yes.</p> <p>7 Q. Okay. So does that mean that, instead of 13</p> <p>8 out of 1,000 women who use talcum powder, then you</p> <p>9 would expect to see 17 out of 1,000 who would develop</p> <p>10 ovarian cancer in their lifetime?</p> <p>11 MS. O'DELL: Object to the form.</p> <p>12 THE WITNESS: I'd have to do the math,</p> <p>13 but that sounds about right.</p> <p>14 BY MS. BOCKUS:</p> <p>15 Q. And out of those 17 per thousand, 13 would</p> <p>16 have developed it anyway; correct?</p> <p>17 MS. O'DELL: Object to the form.</p> <p>18 THE WITNESS: Yes.</p> <p>19 BY MS. BOCKUS:</p> <p>20 Q. And do you know of any methodology that would</p> <p>21 allow you to identify which of the 4 out of 17</p> <p>22 developed ovarian cancer because of their use of talc</p> <p>23 as opposed to just being on this planet and living a</p> <p>24 certain number of years?</p> <p>25 MS. O'DELL: Object to the form.</p>	<p style="text-align: right;">Page 325</p> <p>1 A. So do I know which one of those -- what</p> <p>2 number are we up to now?</p> <p>3 Q. The 4 out of 17.</p> <p>4 A. -- the 4 out of 17 --</p> <p>5 Q. Yes.</p> <p>6 A. -- was caused by talcum powder?</p> <p>7 Q. Right.</p> <p>8 A. I don't think I can say that.</p> <p>9 Q. Do you know of any methodology that would</p> <p>10 allow someone to identify which of the 4 out of 17</p> <p>11 were associated with their talc use versus associated</p> <p>12 with just living that long?</p> <p>13 MS. O'DELL: Objection to form.</p> <p>14 THE WITNESS: I'm not aware of any --</p> <p>15 if you're talking about biomarkers or something else,</p> <p>16 I'm not aware of any that would distinguish between</p> <p>17 cancer caused by talc and cancer caused by age alone.</p> <p>18 BY MS. BOCKUS:</p> <p>19 Q. Okay. And if one were to guess, they would</p> <p>20 be mistaken two times out of three; correct?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 THE WITNESS: To guess about what?</p> <p>23 BY MS. BOCKUS:</p> <p>24 Q. Which of the 17 had ovarian cancer because of</p> <p>25 their talc use as opposed to because they would have</p>

<p style="text-align: right;">Page 326</p> <p>1 gotten it anyway?</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: I'm not quite sure</p> <p>4 I understand where you're going or what the question</p> <p>5 is. I think the answer is we don't -- we won't -- we</p> <p>6 can't identify which one of those patients that have</p> <p>7 ovarian cancer because they all -- your hypothetical</p> <p>8 is that they all were exposed to talc.</p> <p>9 MS. O'DELL: I don't think that was her</p> <p>10 hypothetical.</p> <p>11 THE WITNESS: Okay. Well, then I've</p> <p>12 lost this.</p> <p>13 BY MS. BOCKUS:</p> <p>14 Q. As I under -- well, let me just move on.</p> <p>15 When women go swimming in a swimming pool,</p> <p>16 does chlorinated water go into their uterus?</p> <p>17 A. Goes into their vagina.</p> <p>18 Q. That wasn't my question. Does it go to their</p> <p>19 uterus?</p> <p>20 A. Probably not.</p> <p>21 Q. Why not?</p> <p>22 A. I don't know the answer to that question.</p> <p>23 Q. When women go swimming in the ocean, does</p> <p>24 saltwater go into their uterus?</p> <p>25 A. Not usually, no.</p>	<p style="text-align: right;">Page 328</p> <p>1 incidence of ovarian cancer in women who have been</p> <p>2 competitive swimmers?</p> <p>3 A. Not that I'm aware of.</p> <p>4 Q. Those women clearly will have spent hours a</p> <p>5 day, every day, in a swimming pool for many years of</p> <p>6 their life; correct?</p> <p>7 A. Yes.</p> <p>8 Q. And you would expect, would you not, if</p> <p>9 particles from outside a woman's body could freely</p> <p>10 move into the inside of her body, that the chlorine</p> <p>11 and other particles found in a swimming pool would</p> <p>12 make their way to their ovaries; correct?</p> <p>13 A. They could. But if they're not carcinogens,</p> <p>14 then they wouldn't cause any problem.</p> <p>15 Q. Would any foreign body that makes its way to</p> <p>16 its ovary -- to a woman's ovary cause a foreign body</p> <p>17 reaction?</p> <p>18 A. Not necessarily.</p> <p>19 Q. What foreign particle could make its way to a</p> <p>20 woman's ovary and not cause a foreign body reaction?</p> <p>21 MS. O'DELL: Objection to the form.</p> <p>22 THE WITNESS: I think that those that</p> <p>23 don't cause inflammation, those that are not cleared.</p> <p>24 We talked about cornstarch earlier in today's</p> <p>25 proceedings, and cornstarch seems not to cause an</p>
<p style="text-align: right;">Page 327</p> <p>1 Q. Why not?</p> <p>2 A. It just doesn't.</p> <p>3 Q. Is there something blocking the uterus from</p> <p>4 the vagina?</p> <p>5 A. The cervix is there, and there is mucus in</p> <p>6 the cervix at certain times. I think the other, to</p> <p>7 follow up on your question with a little bit better</p> <p>8 answer, is that exposure to the water is limited.</p> <p>9 It's not like the patient's in the water for hours,</p> <p>10 day after day after day.</p> <p>11 Q. That really wasn't my question.</p> <p>12 A. Okay.</p> <p>13 Q. My question has to do with the passage of any</p> <p>14 kind of particles from outside the human body to</p> <p>15 inside the human body -- the female body.</p> <p>16 A. Okay.</p> <p>17 Q. Is it your opinion that particles contained</p> <p>18 in bathwater make their way into the fallopian tubes?</p> <p>19 A. I don't have an answer -- answer or opinion</p> <p>20 on that.</p> <p>21 Q. Same question for swimming pool water.</p> <p>22 A. Likewise.</p> <p>23 MS. O'DELL: Objection to form.</p> <p>24 BY MS. BOCKUS:</p> <p>25 Q. Do you know whether there's an increased</p>	<p style="text-align: right;">Page 329</p> <p>1 inflammatory reaction. It gets cleared by the immune</p> <p>2 system, and it dissolves.</p> <p>3 BY MS. BOCKUS:</p> <p>4 Q. Does cornstarch make it to the ovary?</p> <p>5 A. Cornstarch has been documented to get to the</p> <p>6 ovary, yes.</p> <p>7 Q. Has it been associated with foreign body</p> <p>8 reaction in the ovary?</p> <p>9 A. Not that I'm aware of.</p> <p>10 Q. Do you know whether pelvic mesh causes</p> <p>11 ovarian cancer?</p> <p>12 A. Mesh?</p> <p>13 Q. Yes.</p> <p>14 A. Not that I'm aware of.</p> <p>15 Q. Is pelvic mesh a foreign body?</p> <p>16 A. Yes. It's in the vagina or -- yeah, it's</p> <p>17 placed in the vagina, not in the peritoneal cavity per</p> <p>18 se.</p> <p>19 Q. Does pelvic mesh cause chronic inflammation?</p> <p>20 A. Not that I'm aware of. I think it causes</p> <p>21 acute inflammation and an ingrowth of fibroblasts and</p> <p>22 fibrous tissue to cause -- to get the result that the</p> <p>23 surgeon wants and the patient wants.</p> <p>24 Q. Just because something is classified as a</p> <p>25 carcinogen doesn't mean it's carcinogenic to every</p>

<p style="text-align: right;">Page 330</p> <p>1 organ in the body; correct?</p> <p>2 A. I think that's fair to say.</p> <p>3 Q. And I think you told us previously that, to</p> <p>4 your knowledge, you're not aware of nickel, chromium,</p> <p>5 or cobalt ever being identified as carcinogenic to the</p> <p>6 ovary; correct?</p> <p>7 A. I'm not aware that anybody's ever tested that</p> <p>8 hypothesis.</p> <p>9 Q. Did you look at the IARC classifications of</p> <p>10 those three heavy metals?</p> <p>11 A. Yes.</p> <p>12 Q. And did you see where IARC did not identify</p> <p>13 that they were carcinogenic to the ovary?</p> <p>14 MS. O'DELL: Objection to form.</p> <p>15 THE WITNESS: Right. I'm not sure that</p> <p>16 there's any data, going back to my answer to my last</p> <p>17 question, where that's ever been tested. So two of</p> <p>18 those heavy metals are considered carcinogens, but not</p> <p>19 specifically to the ovary because they haven't been</p> <p>20 tested in the ovary.</p> <p>21 BY MS. BOCKUS:</p> <p>22 Q. So without that -- without those tests, you</p> <p>23 can't say one way or the other whether those heavy</p> <p>24 metals, the three you identify in your report,</p> <p>25 increase the risk of ovarian cancer, can you?</p>	<p style="text-align: right;">Page 332</p> <p>1 Initiative is a poorly designed, poorly executed</p> <p>2 study?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: Yes.</p> <p>5 BY MS. BOCKUS:</p> <p>6 Q. Is it your opinion that the Nurses' Health</p> <p>7 Study is a poorly designed, poorly executed study?</p> <p>8 MS. O'DELL: Object to the form.</p> <p>9 THE WITNESS: With regard to the</p> <p>10 detection of ovarian cancer being caused by perineal</p> <p>11 use of talcum powder, yes.</p> <p>12 BY MS. BOCKUS:</p> <p>13 Q. Is it your opinion that the Gonzalez Sister</p> <p>14 Study is a poorly designed, poorly executed study?</p> <p>15 A. Yeah. That's the worst one.</p> <p>16 Q. You have testified -- and this certainly</p> <p>17 would be part of your practice to understand -- that</p> <p>18 we now know that HPV causes cervical cancer; correct?</p> <p>19 A. That's correct.</p> <p>20 Q. What is the odds ratio of developing cervical</p> <p>21 cancer in women who have HPV -- or who have had HPV</p> <p>22 versus those who have not?</p> <p>23 A. HPV is nearly 100 percent -- let me turn this</p> <p>24 back around.</p> <p>25 Women with squamous cell carcinoma of the</p>
<p style="text-align: right;">Page 331</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: I think they're contained</p> <p>3 within Johnson's baby powder.</p> <p>4 BY MS. BOCKUS:</p> <p>5 Q. That wasn't my question.</p> <p>6 Without science to support that, you cannot</p> <p>7 say that these three heavy metals that you identify in</p> <p>8 your report cause or contribute to cause ovarian</p> <p>9 cancer; correct?</p> <p>10 MS. O'DELL: Object to the form.</p> <p>11 THE WITNESS: I think they're in</p> <p>12 Johnson baby powder and the baby powder causes ovarian</p> <p>13 cancer. So something amongst that, including the</p> <p>14 heavy metals, is contributing to the onset of ovarian</p> <p>15 cancer.</p> <p>16 BY MS. BOCKUS:</p> <p>17 Q. And you're comfortable saying that without</p> <p>18 any science to support it; correct?</p> <p>19 MS. O'DELL: Objection to form.</p> <p>20 THE WITNESS: The science is the</p> <p>21 epidemiology of increased risk of ovarian cancer in</p> <p>22 women that are exposed to Johnson baby powder.</p> <p>23 BY MS. BOCKUS:</p> <p>24 Q. Did I understand your testimony previously</p> <p>25 that it is your opinion that the Women's Health</p>	<p style="text-align: right;">Page 333</p> <p>1 cervix, which is the most common type, almost all --</p> <p>2 as close to 100 percent as possible -- have been</p> <p>3 infected with HPV.</p> <p>4 Q. And that allows the scientific and medical</p> <p>5 community to conclude with consensus that HPV causes</p> <p>6 cervical cancer; correct?</p> <p>7 A. Yes, but not in all women that are infected</p> <p>8 with HPV.</p> <p>9 Q. There is no similar factor for ovarian cancer</p> <p>10 as closely linked as HPV is to cervical cancer, is</p> <p>11 there?</p> <p>12 MS. O'DELL: Objection to form.</p> <p>13 THE WITNESS: I'm not sure I understand</p> <p>14 the question.</p> <p>15 BY MS. BOCKUS:</p> <p>16 Q. Because it wasn't a very good one.</p> <p>17 A. Okay.</p> <p>18 Q. You indicated that close to 100 percent of</p> <p>19 all women who develop a specific -- the most common</p> <p>20 type of cervical cancer have had HPV; correct?</p> <p>21 A. That's correct.</p> <p>22 Q. There is nothing even close to that in terms</p> <p>23 of an exposure and ovarian cancer; correct?</p> <p>24 A. Yes, I would agree.</p> <p>25 Q. Do you know what percentage of sperm make it</p>

<p style="text-align: right;">Page 334</p> <p>1 to the fallopian tube from a single ejaculation?</p> <p>2 A. I don't.</p> <p>3 Q. You know that that's been studied; correct?</p> <p>4 A. I don't know that. The last time I did any</p> <p>5 reproductive endocrinology was in 1975. So I don't</p> <p>6 know what's --</p> <p>7 Q. Let me ask you --</p> <p>8 A. -- been studied.</p> <p>9 Q. I apologize. I didn't mean to interrupt.</p> <p>10 A. Yes.</p> <p>11 Q. Do you have any reason to believe that a talc</p> <p>12 particle would fare better than a sperm in terms of</p> <p>13 its chances of making it from the vagina to the ovary?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 THE WITNESS: No.</p> <p>16 BY MS. BOCKUS:</p> <p>17 Q. Do you think that it's probably that fewer</p> <p>18 talc particles -- or a smaller percentage of talc</p> <p>19 particles deposited into the vagina would make it to</p> <p>20 the ovary than percentage of sperm?</p> <p>21 A. I don't have an opinion.</p> <p>22 Q. Okay. With regard to studies by Dr. Saed, do</p> <p>23 you believe that it would have been appropriate for</p> <p>24 Dr. Saed to indicate on those studies that his</p> <p>25 research was being funded by plaintiffs' lawyers in</p>	<p style="text-align: right;">Page 336</p> <p>1 THE WITNESS: I think the journal, if</p> <p>2 it's going to publish, would want to make sure that</p> <p>3 they are publishing information that's correct and,</p> <p>4 you know, through the peer review process, and also</p> <p>5 any conflicts of interest are declared, any sources of</p> <p>6 funding are usually declared, including grants from</p> <p>7 National Institutes of Health, for example.</p> <p>8 BY MS. BOCKUS:</p> <p>9 Q. When Dr. Saed placed talc on these cultured</p> <p>10 ovarian cancer cells, one of the findings that he</p> <p>11 reported was that it increased the level of CA-125;</p> <p>12 correct?</p> <p>13 A. Yes.</p> <p>14 Q. You would agree that CA-125 is raised by many</p> <p>15 things; correct?</p> <p>16 A. Yes, including inflammation -- in particular</p> <p>17 inflammation in terms of a false positive CA-125.</p> <p>18 Q. It can be raised by pregnancy; is that right?</p> <p>19 A. Yes.</p> <p>20 Q. Can be raised by cirrhosis of the liver?</p> <p>21 A. Yes.</p> <p>22 Q. Can be raised by uterine fibroids; correct?</p> <p>23 A. Yeah --</p> <p>24 Q. By all kinds of things?</p> <p>25 A. -- among other things, yes.</p>
<p style="text-align: right;">Page 335</p> <p>1 this litigation?</p> <p>2 MS. O'DELL: Object to the form.</p> <p>3 THE WITNESS: I'm not sure I understand</p> <p>4 exactly what was his funding.</p> <p>5 BY MS. BOCKUS:</p> <p>6 Q. For the studies that you're relying on, the</p> <p>7 Saed studies that you have relied on in your report.</p> <p>8 A. I'm not aware of the extent of the funding,</p> <p>9 if it was from the attorneys -- the plaintiffs'</p> <p>10 attorneys.</p> <p>11 Q. Assuming that the evidence will show that the</p> <p>12 funding for Dr. Saed's experiments came from</p> <p>13 plaintiffs' attorneys, would it be appropriate and</p> <p>14 ethical for a physician to reveal that that's the</p> <p>15 source of their funding?</p> <p>16 MS. O'DELL: Objection to form.</p> <p>17 THE WITNESS: So peer-reviewed journals</p> <p>18 have certain conflict of interest statements and</p> <p>19 disclosures that are asked as part of the peer review</p> <p>20 process of accepting a manuscript. So I'm not sure</p> <p>21 what the policies are of this particular journal.</p> <p>22 BY MS. BOCKUS:</p> <p>23 Q. So does such a conflict of interest only have</p> <p>24 to be revealed if it's the policy of the journal?</p> <p>25 MS. O'DELL: Objection to form.</p>	<p style="text-align: right;">Page 337</p> <p>1 Q. And Dr. Saed did not use any positive or</p> <p>2 negative controls in his study, did he?</p> <p>3 MS. O'DELL: Objection. Form.</p> <p>4 THE WITNESS: He did use controls in</p> <p>5 his study.</p> <p>6 BY MS. BOCKUS:</p> <p>7 Q. Did Dr. Saed use any controls in which he</p> <p>8 applied a -- something like glass beads to the same</p> <p>9 tissue to see what the reaction would be compared to</p> <p>10 the talc he was applying?</p> <p>11 MS. O'DELL: Objection to form.</p> <p>12 THE WITNESS: So applying glass -- I'm</p> <p>13 not a laboratory scientist, but putting glass beads</p> <p>14 into a culture plate, for example? So that would be</p> <p>15 potentially another inflammatory product, so I don't</p> <p>16 know why one would put glass beads into the control</p> <p>17 plate.</p> <p>18 He has controls in all of his tables here</p> <p>19 (indicating). It's just the medium that the talc is</p> <p>20 suspended in. So the medium didn't cause the changes</p> <p>21 that he demonstrates in these cancer cells and these</p> <p>22 epithelial cells. It was the talc that caused the</p> <p>23 changes. That's why you do a control.</p> <p>24 BY MS. BOCKUS:</p> <p>25 Q. But a -- but to do a control with regard</p>

<p style="text-align: right;">Page 338</p> <p>1 to -- to determine whether talc causes these cells to</p> <p>2 react differently than other items that have</p> <p>3 previously been shown not to cause inflammation in the</p> <p>4 cells, you would need to add something in addition to</p> <p>5 the medium; correct?</p> <p>6 MS. O'DELL: Objection to form.</p> <p>7 THE WITNESS: No. That's what a</p> <p>8 control is. Why would you add anything? That would</p> <p>9 be a third experiment. You've got your controls and</p> <p>10 now your glass beads and now your talc.</p> <p>11 BY MS. BOCKUS:</p> <p>12 Q. Is it your understanding that glass beads</p> <p>13 would cause inflammation to the ovarian epithelial?</p> <p>14 A. I don't know what they do. I don't know why</p> <p>15 one would put glass beads in a control.</p> <p>16 Q. Other than the medium, did Dr. Saed</p> <p>17 include -- did he do any test to determine whether</p> <p>18 other particulate would cause the exact same reaction</p> <p>19 as the talc?</p> <p>20 A. I don't think that was part of his</p> <p>21 experimental design.</p> <p>22 Q. Do you think that would have been an</p> <p>23 appropriate experimental design to determine if talc</p> <p>24 elicited a response different than any other foreign</p> <p>25 particulate?</p>	<p style="text-align: right;">Page 340</p> <p>1 that that particulate -- in this case, talc -- causes</p> <p>2 cancer; correct?</p> <p>3 MS. O'DELL: Object to the form.</p> <p>4 THE WITNESS: It doesn't -- it's not</p> <p>5 conclusive, but it certainly is a step in the process</p> <p>6 leading towards cancer.</p> <p>7 BY MS. BOCKUS:</p> <p>8 Q. And there are specific tests that can be done</p> <p>9 for genotoxicity; correct?</p> <p>10 Are you familiar with those --</p> <p>11 A. I'm not familiar with what that exactly</p> <p>12 means.</p> <p>13 Q. Have you seen studies where, in the lab, they</p> <p>14 have started this process, such as Dr. Saed did with</p> <p>15 causing a single gene mutation, and then implanting</p> <p>16 that tissue into a lab animal to see if it actually</p> <p>17 grows into a cancer?</p> <p>18 MS. O'DELL: Object to the form.</p> <p>19 THE WITNESS: I'm not aware of that,</p> <p>20 but it's certainly -- I presume it's possible to do</p> <p>21 something like that, but I'm not sure.</p> <p>22 BY MS. BOCKUS:</p> <p>23 Q. I think you've answered this question. And</p> <p>24 if you have, I apologize.</p> <p>25 What is the threshold response for talc?</p>
<p style="text-align: right;">Page 339</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: Oh, you could do an</p> <p>3 extensive experiment of all kinds of particulates and</p> <p>4 compare it with talc. That wasn't the question he was</p> <p>5 trying to ask. I'm not quite sure where you're going</p> <p>6 with this. I mean...</p> <p>7 BY MS. BOCKUS:</p> <p>8 Q. To determine whether the changes that he</p> <p>9 noted actually cause cancer would take more steps;</p> <p>10 correct?</p> <p>11 A. Yes. He's showing --</p> <p>12 MS. O'DELL: Object to the form.</p> <p>13 THE WITNESS: -- that there's gene</p> <p>14 mutations. They are the first step -- or the next</p> <p>15 step towards cancer.</p> <p>16 BY MS. BOCKUS:</p> <p>17 Q. And all of our -- we all have gene mutations</p> <p>18 going on in our bodies every day; correct?</p> <p>19 A. Yes. A little scary.</p> <p>20 Q. And we all have -- thank God, the way we're</p> <p>21 put together, there are systems in place that detect</p> <p>22 gene mutations and kill them; correct?</p> <p>23 A. Apoptosis. Yes.</p> <p>24 Q. And so the fact that a gene mutation is</p> <p>25 caused in a Petri dish is a long ways from proving</p>	<p style="text-align: right;">Page 341</p> <p>1 MS. O'DELL: Object to the form.</p> <p>2 THE WITNESS: The threshold response</p> <p>3 that would induce cancer, I presume is what you're</p> <p>4 really asking?</p> <p>5 BY MS. BOCKUS:</p> <p>6 Q. Yes, sir. Thank you.</p> <p>7 A. I don't think we know that.</p> <p>8 MS. BOCKUS: That's all that I have.</p> <p>9 Thank you.</p> <p>10 THE WITNESS: Thank you.</p> <p>11 MS. BOCKUS: I'll cede back my last 15</p> <p>12 minutes to the other defense counsel who are here.</p> <p>13 MS. O'DELL: Do you have questions?</p> <p>14 MR. BILLINGS-KANG: I don't think so,</p> <p>15 no.</p> <p>16 MS. O'DELL: Do you have questions?</p> <p>17 MR. ZELLERS: No further questions.</p> <p>18 MR. MIZGALA: I want to ask a question.</p> <p>19 MR. ZELLERS: Please do.</p> <p>20 CROSS-EXAMINATION BY COUNSEL FOR THE DEFENDANT PTI</p> <p>21 BY MR. MIZGALA:</p> <p>22 Q. Doctor, on page 2 of your report, at the</p> <p>23 bottom --</p> <p>24 A. Yes.</p> <p>25 Q. -- you write (as read):</p>

<p style="text-align: right;">Page 342</p> <p>1 "I approached each article 2 objectively and critically, 3 assessing for factors such as 4 design, power, reputation of the 5 authors, quality of the journal, 6 and potential biases." 7 Correct? 8 A. Yes, that's what I wrote. 9 Q. Where is that -- where is that written down? 10 Where is it compiled? 11 A. Where is what compiled? 12 Q. All those things that you assessed? Did you 13 reduce that to writing anywhere? 14 A. No. I mean, these are the articles 15 I identified and reviewed and assessed (indicating). 16 Q. Okay. So you don't have a spreadsheet or 17 something of all these factors that you assessed? 18 A. No. 19 MS. O'DELL: Objection to form. 20 THE WITNESS: No. 21 BY MR. MIZGALA: 22 Q. In your head? 23 A. In my head at the time, and I chose articles 24 that I thought were appropriate to put into my report. 25 MR. MIZGALA: Okay. No further</p>	<p style="text-align: right;">Page 344</p> <p>1 and they were hypotheticals, as I recall -- regarding 2 specific patients and the cause or causes of their 3 ovarian cancer. 4 In regard to a woman who has potentially, 5 say, a BRCA mutation -- maybe she's of a certain 6 age -- and she's a routine user of talcum powder such 7 as Johnson's baby powder, do you have an opinion as to 8 what the causes of her cancer would be? 9 MR. ZELLERS: Objection. Form. 10 THE WITNESS: So several causes, but 11 the talcum powder would have to be considered a 12 contributing cause to her ovarian cancer. 13 BY MS. O'DELL: 14 Q. For a woman who has -- in whom there's not 15 been identified a known risk factor but she is a 16 routine user of talcum powder such as baby powder or 17 Shower to Shower, do you have an opinion as to what 18 one of the causes of her cancer -- ovarian cancer 19 would be? 20 MR. ZELLERS: Objection. Form. 21 THE WITNESS: What I've been trying to 22 say all day is the Johnson & Johnson baby powder 23 causes ovarian cancer. In this particular patient, it 24 is a significant contributing cause. 25 MS. O'DELL: I have nothing further,</p>
<p style="text-align: right;">Page 343</p> <p>1 questions. 2 MS. O'DELL: Let's go off the record. 3 THE VIDEOGRAPHER: Going off record at 4 5:23 p.m. 5 (Recess taken from 5:23 p.m. to 5:40 p.m.) 6 THE VIDEOGRAPHER: Back on the record 7 at 5:40 p.m. 8 CROSS-EXAMINATION BY COUNSEL FOR THE PLAINTIFFS 9 BY MS. O'DELL: 10 Q. Dr. Clarke-Pearson, I have just a few 11 questions to ask you. 12 First, let me ask you, in regard to 13 asbestos, can asbestos be inhaled and cause ovarian 14 cancer? 15 MR. ZELLERS: Objection to form. 16 THE WITNESS: Yes. 17 Yes. IARC has deemed that true, to be the 18 case that it can cause ovarian cancer by inhalation. 19 BY MS. O'DELL: 20 Q. And, similarly, can fibrous talc be inhaled 21 and cause ovarian cancer? 22 MR. ZELLERS: Objection. Form. 23 THE WITNESS: Yes. The same answer. 24 BY MS. O'DELL: 25 Q. You were asked a series of questions about --</p>	<p style="text-align: right;">Page 345</p> <p>1 Doctor. Thank you. 2 THE WITNESS: Okay. Thank you. 3 FURTHER EXAMINATION BY COUNSEL FOR THE 4 JOHNSON & JOHNSON DEFENDANTS 5 BY MR. ZELLERS: 6 Q. The asbestos studies that you referred to 7 earlier dealing with inhalation, those were 8 occupational studies; correct? 9 MS. O'DELL: Object to the form. 10 THE WITNESS: Yes. 11 MR. ZELLERS: Okay. I have no further 12 questions. 13 MS. BOCKUS: I have one. 14 FURTHER EXAMINATION BY COUNSEL FOR THE 15 DEFENDANT IMERYS 16 BY MS. BOCKUS: 17 Q. Doctor, are you aware of any study that 18 indicates that women who carry a BRCA gene mutation 19 and uses -- and has a lifetime history of using talcum 20 powder is at a higher risk of developing ovarian 21 cancer than women who have the BRCA gene mutation and 22 have never used talcum powder? 23 MS. O'DELL: Objection to form. 24 THE WITNESS: It would be my opinion 25 that talcum powder would increase the patient's chance</p>

Daniel L. Clarke-Pearson, M.D.
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1 of having ovarian cancer. I'm not aware of any study
 2 that's been able to investigate that to date.
 3 BY MS. BOCKUS:
 4 Q. That is something that could be investigated;
 5 correct?
 6 MS. O'DELL: Object to the form.
 7 THE WITNESS: In a case-control study,
 8 yes.
 9 BY MS. BOCKUS:
 10 Q. But to your knowledge, it's never been
 11 reported; correct?
 12 A. Not that I'm aware of.
 13 MS. BOCKUS: That's all I have.
 14 THE WITNESS: Thank you, everybody.
 15 MR. ZELLERS: Thank you, Doctor.
 16 THE VIDEOGRAPHER: Just one second.
 17 This concludes the deposition of Dr. Daniel
 18 Clarke-Pearson. Time going off the record is
 19 5:44 p.m.
 20 (Whereupon, at 5:44 p.m., the deposition ceased.
 21 Signature was reserved.)
 22
 23
 24
 25

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1 ACKNOWLEDGMENT OF DEPONENT
 2 I, DANIEL L. CLARKE-PEARSON, M.D., do hereby
 3 acknowledge that I have read and examined the foregoing
 4 testimony, and the same is a true, correct, and complete
 5 transcription of the testimony given by me, and any
 6 corrections appear on the attached errata sheet signed
 7 by me.
 8
 9 _____
 10 (DATE) (SIGNATURE)
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1 E R R A T A
 2 CASE NAME: TALCUM POWDER LITIGATION MDL NO. 2738CASE
 3 WITNESS NAME: DANIEL L. CLARKE-PEARSON, M.D.
 4 CASE NUMBER: 16-2738 (FLW)(LHG)
 5 PAGE LINE READS SHOULD READ
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1 STATE OF NORTH CAROLINA)
) C E R T I F I C A T E
 2 COUNTY OF ORANGE)
 3 I, Sophie Brock, Court Reporter and Notary
 4 Public, the officer before whom the foregoing proceeding
 5 was conducted, do hereby certify that the witness(es)
 6 whose testimony appears in the foregoing proceeding were
 7 duly sworn by me; that the testimony of said witness(es)
 8 were taken by me to the best of my ability and
 9 thereafter transcribed under my supervision; and that
 10 the foregoing pages, inclusive, constitute a true and
 11 accurate transcription of the testimony of the
 12 witness(es).
 13 I do further certify that I am neither counsel
 14 for, related to, nor employed by any of the parties to
 15 this action, and further, that I am not a relative or
 16 employee of any attorney or counsel employed by the
 17 parties thereof, nor financially or otherwise interested
 18 in the outcome of said action.
 19 This, the 6th day of February, 2019.
 20
 21
 22
 23 _____
 24 Sophie Brock, RPR, RMR, RDR, CRR
 25 Notary Number: 200834000001